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and distinguished the Schneider lens series Symmar-S and Componon-S by the EUROPHOT quality label.

Photo: taken with the Schneider Symmar-S 5,6/240 mm, aperture 45, studio flash, 13×18 format, Agfa Chrom 50 S / Hans Wilder.

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he magazine in English, German and rench for applied medium- and arge-format-photography.

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hose photos which have been taken with the mplest of means are often a success for the ery reason that the photographer has been able o concentrate his thoughts on the visual effect reated by his picture rather than become bogged own with mere technicalities. (See also the contri-ution in this number on fashion photography). hoto: Walter E. Lautenbacher BFF, Leonberg.

hoto: M. Germann, Holland.
. nude study executed with the simplest of neans.

2/1976

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LARGE-FORMAT PHOTOGRAPHY

WITH EXTRA-LONG FOCAL LENGTHS

Dr. A. Gewehr

Lenses of unusually long focal length are to be found in the range of lenses produced by either Schneider or Rodenstock under the designations Repro-Claron and Apo-Ronar. These lenses, which were actually designed for reproduction purposes, are available in shutters. Not all that many photographers and photo-designers are aware of just how manifold the creative possibilities are which lie hidden in these "long" lenses. The initiated sometimes claim that this is their most carefully guarded secret.

To deal with a technical point straight away, the following should be observed: lenses of over 600 mm focal length should be supported by *two* tripods in order to obtain the necessary stability.

Turning to the field of application of such super-long lenses, one might ask where they are most appropriate.

In industrial photography one will find that such long lenses lend the foreground, middle and background about the same relative size. Objects actually staggered in depth appear crushed together. One of the first photographers to utilize this effect of compression was Andreas Feininger when he shot oil drilling rigs in America. In the age of colour photography the condensation is taken one step further when abstract filtration is added to the overall impression.

Although these process lenses were originally calculated for close-up work, they also provide good sharpness on objects at infinity. This is a fact which both manufacturers underline in their technical literature on these lenses. Tests carried out by the author on a 600 mm Apo-Ronar tend to confirm this claim.

In the field of advertising photography, long lenses, with their characteristic of narrowing the depth of field right down to inches, permit one to limit sharp focus to the product in question. The Stuttgart photodesigner Franz Lazi was one of the first to make frequent use of this optical phenomenon. For a time he preferred to work with lenses which were three times as long in focal length as the film format diagonal. Slightly off-beat filtration also proved favourable in publicity shots. Gradual, soft vignetting from below or towards the edges of the photo is another technique which is suitable in the present context.

Whatever special effects one decides on, a certain amount of experimentation and the working of a reliable system is unavoidable to start with. Those setting out with such lengthy objects for the first time will notice that "playing around with" the aperture ring can bring about much control over the extent of the zone of sharpness. If one has trouble in determining when the image on the focusing screen is sharpest or as to leave the diaphragm stopped down for some reason or other (the largest aperture is usually f 9 anyhow), one can resort to bracketing: extra shots are taken with a slightly greater and slightly lesser bellows extension.

Finally, lenses of greater focal length are the only satisfactory means of taking portraits in which only the head is shown and in which individual details of the latter are captured. Anyone who is prepared to work in the 5×7 in. format and enlarges only up to 8×10 in. or 10×12 in., will reveal details which would be entirely lost if the negatives had been taken on 35 mm or roll film. For lighting the latter kind of large-format photograph there is no other source of illumination which can quite replace a large north window. Transferred out of doors, one has the advantage that practically any natural background can be used as an unsharp patchwork of light and shade. Heads which deserve a subtle treatment rather than a uniform documentation of their appearance call for some form of abstraction. Here black-and-white film is preferred for the reason that close-up, sharp details of the skin can be rather unaesthetic. The most suitable kind of sitter for such large-format portraits, taken with long focal length lenses, will be found amongst those persons in whose physiognomy the experience of years has left its trace. There remains the question what do we actually mean by "long" focal length when, for example, a format of 5×7 in. is taken? In the case of industrial photography one might set the standard at around 1000 mm, and for portraits and advertising purposes 600 mm is appropriate. Experience has proved that these figures are just about right, especially in view of the depth of field problem.

Colour photo left:

Braggio, Val Calanca in Graubünden, Switzerland. Taken by Edmond van Hoorick.
The oblique lighting from the side and the resulting increase in contrast underline the autumnal mood of this picture.
5×7 in. Linhof Kardan Color, 210 mm Schneider Symmar, $^1/_{30}$ sec. at f 22, Agfachrome 50 S.

by Hans R. Bächtold, Zürich

Right: a well-known "picture". It's the rear side we are interested in here. What motif can be described as "typical postcard" style?

Postcards: what subjects?

In 1874, just as tourism was experiencing its first real heyday, the international postal authorities agreed on a standard format and lower rate for the picture postcard. Since the average tourist did not possess a camera in those days, it is not surprising that the postcard, showing a landscape or other local motif, experienced a considerable boom. A card in those days was, of course, not only a souvenir but also a kind of alibi that the sender had actually been to this or that place. Hence, the motifs were often well-known sights or possibly hotels. Photos of spas, holiday resorts and cities which were easily recognized were also popular. The publishers of such cards were, accordingly, the local authorities who worked together with commercial artists or photographers.

Over the years, not much has altered in this respect, since the majority of postcards still show landscapes, castles and important buildings, etc. They thus represent the cheapest form of publicity for the tourist boards, since it is the customer who pays for it.

In recent years the postcard has had to face competition from large-format wall calendars. Whereas fewer people

"Kloster Schäftlarn and 'Bräustüberlgarten' in the Isar Valley" is the title of this postcard taken by F. Reincke, who himself manages a postcard publishing house. This is a typical postcard, the sole purpose of which is to please as many people as possible. The motif, as such, is not all that interesting. It is merely a judicious composition (correct framing, choice of background, inclusion of people, fair sky, etc.) which makes a picture of it.

Colour photo right:

Many cameras have been pointed at this motif. The most surprising thing about this photo, however, is that it was not taken by a German but by a Japanese photographer—hence the less conventional composition with many flowers in the foreground and an almost unterstated treatment of the main subject. Such a photograph is suitable for postcards as well as calendars. 4×5 in. Linhof Technika, Agfachrome 50 S, $^{1}/_{125}$ sec. at f 22. The camera standard was slightly adjusted according to the Scheimpflug law in order to enhance the foreground. Photo: Yoshiaki Matsuda, Copenhagen.

Bottom:

The Linhof 56×170 mm format made possible by the Linhof Technorama camera. Its roll film pictures with a side ratio of 1 : 3 would seem to have been created for large format postcards of the super-panorama type, views which could otherwise not be taken in with a single exposure. Also high, vertical motifs lend themselves admirably to this format. With such a large original format, one can easily imagine the excellent colour saturation and sharpness.

collect postcards today, the calendar has become increasingly popular. Only through becoming cheaper, has the postcard managed to exist. As mentioned, landscape postcards continue to sell well, but the customer has become more difficult to please and is no longer content with straightforward documentation of the countryside: he looks for a particular, expressive viewpoint, and high printing quality.

Second place is taken by interiors of churches, castles, museums and palaces. Only then do sales statistics follow up with all the other motifs, such as works of art, statues, and reproductions of paintings.

For many many years the standard postcard size of 10×15 cm/3.9×5.9 in. remained supreme. It was handy and, if one wished, could be put into standard envelopes. Some photographers and publishers began to realize the monotony and limitations of the longish form and wished to free their pictorial composition from this frame. Various shapes were tried out such as squarish, extra long, oval and even round. Cards with folding flaps, peep-windows and so on, all had their day. Then came the giant cards which could only be sent in special envelopes and cost extra postage.

All these various shapes and sizes have now been supplemented by one which is, indeed, interesting.

What subjects are preferred nowadays for postcards?

To end on a rather sad note, the landscape is still the most popular—but of a trashy, cheaply sentimental sort. Apparently the customer is even happier if he can get four typical miniature motifs crushed into the space of the usual one. Paintings and art reproductions take a good second place. However, the latter no longer seem to fall within the general category of "mass production". Quite some way behind these come subjects such as "flowers, humour and still life". Postcards illustrating subjects in other countries haye no chance whatsoever.

Top:

Another version of the same motif as seen on the colour page at top left. Taken by Hans R. Bächtold, Zürich.

Colour page left:

Top left and centre: two postcard examples shown in original format: (top) Thuner See with Schreckhorn, Eiger, Mönch und Jungfrau taken by Hans R. Bächtold, Zürich.
Below: "Evening calm on Lake Ammer in Upper Bavaria" taken by F. Reincke.
Right and below: a new format which is highly suitable for special postcards: The Linhof 56×170 mm format with a side ratio of 1 : 3. Previously, one had to piece together several individual, conventional exposures in order to obtain a panoramic view of this kind. With the aid of this new camera from Linhof it is now possible to shoot, from the hand, four, respectively, eight of these giant pictures on roll film. The subjects shown are: "Bavaria" *(top)* and "Marienplatz" in Munich *(bottom)*. Photos by kind permission of Linhof GmbH.

FASHION PHOTOGRAPHY IN PRACTICE

ARNOLD HANDEL

There is no harm in taking a real, hard look at the work of a fashion photographer. To start with, one might try to classify the different aspects. The genuinely creative fashion photographer is akin to a painter, tends to be more closely attached to his camera, though, and makes use of the manifold possibilities of technology only to achieve his own ends. Although he is a reproductive artist—through the fact that he copies fashion—he is, so to speak, the "author" of his own photographic creations. Only in rarer cases will he be found photographing a catalogue, since he is not so terribly inclined to follow the instructions of the commercial artist or a client. He is, as it were, the interpreter of his own ideas.

Of course, he is not spared the task of coming to terms with all the notorious pitfalls of technology. Since he must have a style of his own, it is likely that he will work up to the realization of his own personal conception via a test series on Polaroid film. As a pronounced artist his photo is a clever symbiosis composed of stage directions plus a touch of light artistry. In this respect it is irrelevant whether he works out of doors with fill-in light or in a studio. He will always be a master of the fashionable gag. Yet, his leading maxim will be: "Every photograph should have its own idea". No matter whether he makes use of special props or a bizarre winter landscape, the same thing applies. A fashion series shot by a photographer of this genre is more likely to fascinate the observer than all the efforts of his too-technically-minded colleagues. It is at this point that the classification mentioned above becomes valid.

When one realizes just how few fashion photographers of this type are in existence, it is understandable that there is only a genuine demand for the kind of photographer who can shoot not only haute couture—that is the creations which appear in top fashion magazines—but also ready-made clothing such as everybody wears. Also here one will find masters of the trade. It is from their ranks that the majority of those persons are recruited who provide the illustrations for the big fashion catalogues.

In journalistic fashion photography, daily practice and the techniques involved are subject to quite different laws. The latter are characterized and influenced to a large extent by the personal style of a photographer, by current trends and changes in the mode of dressing itself. Apart from his model, the choice of camera plays a central role in his work. He will possess two or three replacement camera bodies of his favourite make, just for safety. For each special kind of assignment he will also use the camera and focal length which appear to him as most appropriate for the job. At any rate, he is bound to have at least a robust medium-format camera system in which careful attention has been paid to the choice of lenses. Even though a photographer may be a decided protagonist of the medium format camera, he will be obliged to use other formats ranging from 4×5 in. down to 35 mm under certain circumstances.

Colour photo right:

Arnold Handel, the author of this contribution, gave this picture the caption "Karin". This is a good example of an outdoor shot, such as many magazines require: lively, and with original "props".

The popular choice in the upper range is the 4×5 in. Linhof Technika with all its facilities and adjustments or the Linhof 220 hand camera. Constant improvements to these models and their inborn universality permit one to go on working with such cameras for decades. The recent innovation of electronic shutters has set a milestone in the technical development of larger cameras.

Transparency or negative?

The question whether to use reversal or colour negative film in fashion work largely depends on the purpose to which it is to be put later. The reader will have noticed, besides, that many black-and-white illustrations are still to be seen, especially in newspapers. For wide circulation magazines and catalogues of the leading fashion houses, colour transparencies are required in practically all cases. An absolutely perfectly filtered print from colour negative film is a difficult affair where skin tones and textile colours are concerned. The client is justified in expecting reflection copy to be printed from a fairly large taking-format.

Practically all reproduction work in colour printing today is carried out with the aid of electronic scanners. If the original transparency is not large enough for a 1:1 copy, duplicate transparencies have to be produced in the appropriate size.

For textile product photos which are integrated in a graphic art and text layout and of which duplicates also have to be sent to the advertising agencies, one may be fairly certain to find now that really good colour prints are being used. The price, namely, of a quality dye transfer produced from a transparency is so high

that one will seldom be able to resort to this solution. As already mentioned, it is recommended to employ as large a negative format as possible in order to retain maximum possible sharpness in the enlargement.

Whenever the aperture-shutter-speed combination permits it, the fashion photographer prefers to work without a tripod. He does not like to lose the suggestive contact with his model and, also, so as to retain the greatest degree of flexibility as far as camera height and viewpoint are concerned. F 8 or f 11 will be typical apertures, but he may depart from this and call on the aid of a wide-angle or tele lens to extend or shorten the depth of field. Shooting against the sun, or when trying to avoid hard shadows in general, his technique is to use flash, either indirectly or diffused in some manner or other. The Polaroid photo is also not lacking and does good service in telling him whether the flash-dose was enough and at the right angle. In the studio many of the working methods will not differ much from those on location shooting. A 2¼ square or ideal format camera can be put on a tripod or kept in the hand at choice. For a 4×5 in. apparatus it is not wise to forego a tripod, and the latter should be capable of low-level adjustment. Of course, this will mean a slight loss in mobility for the photographer and the model, but then there is little one can do about it. The lighting arrangement in the studio should be designed in such a way that the appearance of daylight is simulat-

All black-and-white photos were taken by Arnold Handel, Dettingen.

Top:

Sandra with bath towels made by the firm Jope in Tübingen; *below left:* "house mannequin of the firm Rall, Reutlingen; *below right:* "Mannequin of the house Sakosa". All three photos were shot with the aid of electronic flash as the main light and daylight for general or fill-in light.

Colour photo left:

The photographic team of the Jens Witthaus Studios have not found it necessary to specialize in any particular field. They take on furniture as well as fashion assignments. Yet, they are not disinclined to make their photography both agreeable *and* useful: composition *and* objectivity. Mamiya RB 67, 127 mm Sekor, flash at f 11, Kodak Ektachrome Professional.

FASHION PHOTOGRAPHY IN PRACTICE

ed as closely as possible. Above all, one should use that lighting effect which does justice to the material being photographed. In the author's studio it is not unusual to find a single flash unit of 1200 ws being used as the main light. On the side opposite to the light source one can set up either white or black niggers according to whether the shadows are to be filled in or deepened.

The background is illuminated with a 600-ws flash arranged at a low level and pointing upwards; this is a kind of "horizontal illumination" which, in the opinion of the author, comes fairly near to the effect of daylight. The 10,000-ws plant is seldom used in the studios, at least not for fashion photography.

Size of studio and equipment: it is difficult to make any generally valid recommendations about how large a studio for fashion photography should be; much depends on the task on hand, the views and working methods of the photographer. It is well known, to take just one example, that Regina Relang took magnificent photographs in a very small studio for many years before she moved into new premises. An attractively furnished changing room with a large mirror should not be lacking; permanently installed or mobile clothes stands for the client's collection are also essential. All the utensils, requisites, etc., which are bought or acquired in the course of years, will require a prop room in which they can be stored in an orderly fashion. As far as the technical equipment of the studios is concerned, electronic flash plant of from 6—10,000 ws is recommended, as well as artificial light illumination consisting of floods, spots, etc. A large north window is also coveted, since high speed black-and-white film gives pleasing results on dull days. Necessary is also some system for suspending seamless paper; a half dozen of such rolls will be perfectly adequate for a start. As far as cameras are concerned, the fashion photographer usually works with a 4×5 in. apparatus—and a wide variety of lenses of varying lengths—as well as a medium-format hand-camera system.

Psychological approach: one should try to avoid everything which contributes towards a hectic working atmosphere or might make the model nervous. A work programme should be carefully thought out, the lighting arranged and checked for proper functioning, the necessary props should be at hand—all such jobs should be finished and done before the models and client appear on the scene for the actual photography. Humour is highly detrimental and should be subdued as far as possible. If one is dissatisfied with the model, it does not help matters to say so. An improvement is much more likely to be obtained through praise, playing suitable music or serving coffee or cognac at the right moment. This will stimulate the team, and soon the desired photos will be in the bag.

Make-up: although good models usually know more about the kind of make-up which suits their type of complexion and how to apply it, the fashion photographer must at least know whether a particular kind of cosmetics treatment will produce the effects he is looking for. Beginners must usually be prevented from applying cover fluid so thickly that the natural skin sheen is destroyed or from using eye shadow which is not appropriate.

Background and/or front projection: in this field it is often desirable to show the model against an exotic landscape without undertaking long and costly journeys. Since it is not at all easy to produce a really natural, realistic impression of, say, a super-imposed foreign scene or city, many have been content to use front projection merely for creating semi-abstract backgrounds. Authenticity is only possible if certain rules are observed. When one carefully examines a photograph of this kind taken of persons, one will always notice a slight contour effect which is due to physical phenomena and can only be eliminated by very strong back lighting. The most essential point to observe in using front projection equipment is to try and simulate the nature and angle of the light which prevailed when the projection transparency was shot. This is not so easy as it may sound. The necessity to shield the projected image (to avoid stray light which would reduce contrast) means that one can only really set the lamps so that light comes obliquely from the side or above. Frontal lighting of the model is not possible. This is regrettable, since the pupils will not contract to show the colour of the eyes properly. In spite of these difficulties and shortcomings, background projection has assumed an important role, especially in advertising photography. There is no really reliable trick by means of which genuine outdoor atmosphere can be conjured up in the studio. Not only is the mood more free and easy on location; also the variety of backgrounds is more varied and subtle, and there are all those little contingencies which suggest an idea for a prop or gag. No matter how ingenious and flexible the operator behind the camera may be, even the charm of the model may not prevent him occasionally lapsing into a sterile period caused by the monotony of the studio lighting and background. Undeniably, the major advantage of working in the studio is that, with the exception of close assistance, the photographer is not exposed to the curiosity of onlookers.

Working according to layout: the drudge of following a preconceived sketch or finished layout is the fate of those who are obliged to keep to the instructions of a commercial artist or client who both may be present. Here the willpower and the creative integrity of the photographer are decisive so that a satisfactory compromise may come about. Only in this way will the photograph retain one important quality which it should always have, namely, naturalness. Essential for the development of a personal photographic style is, apart from the mental processing of appropriate thoughts, also a somewhat pedantic attitude towards the recording of each good "brainwave". It is a good idea to cut out and collect advertisements and the like. It is immaterial whether the point of interest concerns the background arrangement, the type of lighting, particular double exposure technique, sandwiching, blurring or other special effects. Provided it is also perfect in every technical respect, an original and well-thought-out idea will always find a taker.

The current trend in fashion photography today might partly be described as naive originality, if not to say almost primitiveness. This easy-going attitude is also a form of creativity and is largely due to the carefree poise of the model as well as the liberal views of the photographer which, in turn, are the direct result of joie-de-vivre and a fanatical belief in his work.

Certainly, the best creative fashion photography today is still very closely connected with intensive work, sharp concentration and pronounced willpower. Should the current development in all spheres of photography continue to advance at the present rate, not only will mastery of the day-to-day technicalities and hard work be an essential prerequisite but also intuition, personality and uncompromising creativity will be the sole basis for lasting success.

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NEW ASPECTS OF COLOUR TECHNOLOGY

(Part 1)

by Hans Bortsch

In practically no other field of photographic technology has there been, on the one hand, such a sweeping change in recent years as in the quality and general characteristics of colour material, and the rationalization of processing techniques on the other hand. This led to a noticeable reduction in the price of machine-produced prints whilst, at the same time, there was a considerable improvement in quality. Even those who are more interested in the individual, hand-produced enlargement can now enjoy many possibilities which were a mere pipe-dream only a few years ago. Typical of an average colour lab set-up for individual processing not many years ago were five to six adjacent trays which contained the appropriate solution for each stage and which took up much space; there was also a safelight by the "light" of which it was impossible to recognize small objects even after a considerable period of accommodation. Above all, it would be the insufferably long time required from the exposure of the first test strip to the final, properly-filtered enlargement which would astonish the young colour lab apprentice of today.

In those days, under less favourable circumstances, it was not unusual for the above procedure to take up half a day.

There is great justification in supposing that the pronounced preference for colour reversal film in the last two decades, in amateur photography as well as professional, would not have reached such proportions if there had not been, from the outset, a more economical, i. e. simpler way of producing good paper prints or duplicate slides from colour negative film. The most recent improvements in the positive/negative process can do little to alter this state of affairs overnight.

The following survey takes a hard look at the overall colour processing situation in 1975 and picks out those points which are decisive for setting up an efficient colour department within the darkroom.

1. Negative processing

The processing of colour film has been largely standardised for the very good reason that there are different influential factors which are mutually independent. In contrast to black-and-white photography, there is little sense in varying the developing process in keeping with the particular physical characteristics of the motif (illumination contrast, scale of reproduction etc.). Generally speaking, it is usually a matter of closely following known and well-proven procedures. What is mentioned in the present contribution are permissible alterations to the solution concentration and developing time; such remarks refer solely to contrast compensation, however. The widely prevailing standardization in colour processing would make it appear sensible to have one's film processed by an outside custom lab and to concentrate on making the paper prints, respectively, transparencies from the negatives. The high temperatures of the modern rapid processes represent a considerable risk which is better coped with by the continuous running machines in specialized laboratories. Having said that, one must admit that, in studios where film development is required outside normal working hours, there is much to be said for mastering one or two standard programmes which can be run off at any time.

35 mm stock, roll and sheet film may be processed in small tanks, rotary drums for one-shot chemistry, medium and large-sized tanks. The method chosen is largely a question of economy. In cases where film processing is called for only occasionally, the well-proven "hand" tanks, for either roll or sheet film, are the best answer. Of course, this method is only economical if the yield of the chemicals can be fully utilized within their limited storage life. This is of less importance, of course, with rapid-processing chemistry. Anyone wishing to just quickly develop a 35 mm film whilst on a journey, can do so in a daylight tank selecting a 20 °C process. In such instances the Jobo 2400 tank has proved its worth and uniform results are obtained if one is obliged to alter the solution concentration, since the film remains fully immersed for the entire process and inversion agitation is used. Especially roll film can be very easily loaded with the aid of a guiding device supplied with the Combina tank (GEPE). The chemicals are not usually fully exploited in one go when using such tanks. Regeneration is difficult in the case of such relatively small volumes, and it is therefore better, if possible, to wait until one has sufficient films to utilize about two thirds of the capacity of the made-up solution. In this way one will arrive at an economic expenditure and keep up uniform results. Essential for such consistency are factors such as exact observation of the processing time and temperature, keeping an eye on the state of exhaustion of the

Top:

Also amateurs have the possibility of processing their films on a full-scale basis and under almost professional conditions. The darkroom equipment at present on the amateur market is versatile; here, for example, we have the washing system "Cascade" made by Jobo.

Below:

Jobo is also the manufacturer of this practical processor with two rotation speeds for film and paper: the Jobo "Colorprocessor Professional CPA".

solutions, etc. Another important factor is uniform circulation of the solutions around the film. Those who possess motor-driven apparatus can forget about this problem. As a general rule, hand tanks should be inverted every ten seconds during the first minute and every 30 sec. during the rest of the time. After developer has been poured into the tank, it is recommended to give it a sharp jolt in order to remove bubbles from the film surface. Streak-like variations in density are usually the result of hasty, irregular agitation.

Spurred on by the rationalization ideal, many film manufacturers are doing their utmost to design their emulsions in such a way that as many different film types as possible can be processed in one set of chemistry. This requirement has been made quite clear to all research personnel. It goes without saying that anyone who wishes—for some reason or other—to process colour film in tanks which are not light tight must ensure that absolutely no light enters the room until the fixing or fixing/bleaching stage has been completed.

Before going into the individual processing stages, let us take a look at the types of colour film available at present. There are masked and unmasked films. The mask brings about a considerable improvement in the purity of the colours and, generally, consists of the two mask layers, yellow and magenta. The unmasked type of film permits considerable

Lower picture group:

Top left:

amateur dryer for RC paper made by Kindermann. The apparatus can dry one sheet of paper 203 × 254 mm in about three minutes, smaller sizes also, of course.

Below left:

The Paterson Developing System 4, likewise with washer.

Top right:

The Colenta 30, based on the Huss principle, is a small but efficient developing machine (can be adapted for fully automatic functioning) for processing all manner of film and paper types.
Anyone who can afford this machine (it is not all that expensive) will be freed from all darkroom worries.

Bottom right:

Jobo 20 M/S 8, a processor for narrow-gauge cine film, is the answer for those who want to develop their own films (or short runs of it as a check).

alteration to be carried out to the developing time. There is coloured-coupler masked film (itself coloured) such as Agfacolor, also Kranscolor, Neckermann Brilliant, Turacolor, Orwocolor and those with integral tripack. The couplers are embedded in non-soluble substances and dispersed drop-like in the emulsions. The carriers of the coloured couplers are resinoid and plastic materials. The latter category includes not only the Kodak films but also Revue color 2000 and 3000, Fujicolor N100, GAF-Colorprint, 3 M Color Print, Negracolor.

Agfacolor

All Agfa negative colour films may be processed according to the same data irrespective of format. Only, Agfacolor CN 14 (Minox) and the Orwo films call for slightly shortened developing times. The following table shows the sequence and times for processing at 20 °C.

Agfacolor		Time/min	CN 14	Orwo
Development	±0.5	7—9	6	6
Intermediate bath	±0.5	4 (add 3% colour developer)		
First wash	±3°	14		
Bleaching	±1°	6 deviations affect mask density		
Second wash	±3°	6		
Fixing	±3°	6		
Final wash	±3°	15		
Agepon bath	—	1		

Anyone who requires a very soft gradation for the production of intermediate negatives from transparencies can use the CN 17 film and give it a 50% shorter development without detriment to the colour balance. Chemicals are available for making up batches of 1, 5 and 2×35 litre.

The process requires the following chemicals:

Developer (NPSI)
Intermediate bath (NZW)
Bleaching bath (NII)
Fixing bath (NIII)

One may process the following quantities of film in one litre of working solution without reduction in quality: 6 roll films 120 or 6 35-mm films 135/36 or 10 35-mm films 135/20; 15 35-mm films 135/12 or 15 Rapid, respectively. Pack films. Fresh developing stock and intermediate bath may be kept for about six weeks, the other solutions may be stored for about three months.

Kodak

As a consequence of improvements in film materials, one also finds here only two processes on the market, and there seems to be preferential trend towards the new C 41 process. The remaining Kodacolor, respectively, Ektacolor films (Ektacolor ID Copy, Ektacolor Internegative film and Ektacolor slide and print film for the production of transparencies from negatives) are processed in the older C 22 chemistry whereas other films, such as Kodacolor II, Vericolor II types S and L are all processed in the Flexicolor C41 process irrespective of the format.

Process C 22	temp. °C	time/min
Development	24±½	14
Stop bath	23—25	4
Hardening	23—25	4
normal room illumination possible		
Wash	23—25	4
Bleaching	23—25	6
Wash	23—25	4
Fixing	23—25	8
Wash	23—25	8
Wetting agent	23—25	1

*In the case of Ektacolor print film the developing time is 11 min, for slide film 17 min. In both instances special additives must be poured into the developer. The chemicals are available for batches of 3.8, 13.2 and 19 litres. (½ 3.4 and 5 U.S. 9als.) Unused developer may be kept for about six weeks, the other solutions for eight weeks. In 3.8 litres if developer one may process 25 35-mm films or the same quantity of 120-roll films, 100 4×5 in. sheet films or 12 roll films of the 220 size.

Process C 41 37.8 °C (very exact temperature control necessary)	Temperature tolerance °C	time
Development	37.8±¼	3¼
Bleaching	24—41	6½
Wash	38±1	3¼
Fixing	24—41	6½
Wash	38±1	3¼
Stabilizing	24—41	1½

All the above times include a 10 sec. drip-time. On account of the narrow temperature tolerance of this developer, it is most important to closely observe the so-called starting temperature. It is determined in the following fashion: bring the required amount of developing solution to exactly 37.8 °C. The temperature should be read off only after the thermometer has been submerged for a few minutes. Note down the room temperature. Immerse the loaded reels or hangers and check the temperature again after half a minute. The starting temperature is obtained, assuming same room temperature, by taking 37.8 °C and adding on the temperature loss. When several batches of film are processed one after another, small amounts of solution are carried over into the next stage. To maintain uniform results, the following table shows the amount of solution which must be replaced in millilitre: (Conversion factor ml to fluid ounce (US) = × 0.0338).

Film format	Developer	Bleacher	Fixer	Stabilizer
135/20	45.6	39	39	39
135/36	81.6	58	58	58
120	100	67	67	67
220	200	120	120	120
4×5 in.	132	111	111	111
8×10 in.	134	105	105	105

In the case of sheet film a combination of manual and nitrogen agitation is recommended. For bleaching, fixing and stabilizing solutions one may also use compressed air, since here there is no danger of oxidization.

This process is likewise available in packets for 3.8, 13.2 and 20 litres of working solution. The developer may be kept for six weeks and the other solutions for eight weeks. Assuming the baths are not regenerated, the following minimum quantities of film may be processed:

Film format	3.8 litre/1 gal	13,2 litre/3.4 gal
135/36	16	56
120	16	56
220	8	28
4×5 in.	32	112
5×7 in.	16	56
8×10 in.	8	28

Linhof offers more!

When it comes to precision phototechnical equipment for a multitude of applications in all fields of modern photographic techniques, LINHOF offers more than just one type of large format cameras. First and foremost, the famous TECHNIKA, representing the world's most universal large format camera system, as the compact and mobile camera equally suitable for rangefinder-controlled hand-held shooting or for studio work requiring full camera adjustments.

For even greater flexibility, a complete selection of studio cameras is available at prices to fit every budget. LINHOF KARDAN monorail cameras offer the ultimate in adjustability and precision. They combine advanced modular construction and lightweight design with maximum stability and rigidity under all conditions.

A full range of special medium and large format cameras is part of the all-encompassing LINHOF system of modern professional camera equipment. TECHNORAMA 517, the superb panoramic rollfilm camera – QUADROPHOT 45, the new 4-exposure identification system – AERO TECHNIKA 45 EL, the compact hand-held instrument with fully motorized operation, combining the handling ease and operating convenience of a rollfilm camera with the advantages of the brilliant large picture format.

Leading photographers choose LINHOF precision tripods as the perfect and logical complement to a valuable camera outfit. LINHOF offers the largest selection of amateur and professional tripod systems for still, movie and video cameras plus a wide range of copy stands and precision enlarging systems to meet every requirement in professional, industrial and scientific applications.

The full range of LINHOF phototechnical equipment, now available through our new U.S. distributor, is shown in our latest comprehensive product listing obtainable through your nearest professional dealer, or by writing to the addresses listed below. Ask for your copy today.

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NEW ASPECTS OF COLOUR TECHNOLOGY (PART 1)

Tetenal

This German firm produces chemicals for all the Agfa and Kodak negative films and markets them in packets suitable in size for the home processor. One must differentiate here between the Neofin color developer which is suitable for a wide variety of film brands and the so-called special developers which are attuned to the original manufacturer's recipe and can therefore only be used ideally for a particular type of film. The N I developer is intended for all Agfacolor negative films and is available in packets for ½ litre/0.132 gal. working solution. The NK kit is suitable for all the Kodacolor type of films in the shortened process. For the new Kodacolor II and Vericolor II films there is the NK 2 process. Also in this case it is most important to pay careful attention to the prescribed developing temperature. In view of the fact that it is also possible to carry out this process at a lower temperature of 30 °C. This problem is not quite so intimidating as it may seem. All the Tetenal chemicals are available in handy packs of ½ and 1 litre/0.132 and 0.264 gal of working solution; in the 1 litre size the developer has been divided into two lots of ½ litre on account of the short storage life.

Neofin color

This developer is exclusively intended for tank development and incorporates all the advantages to be drawn from a small volume, one-shot developer. Its universal application makes it highly suitable as an "emergency developer". In comparison to standard developers, Neofin color permits, furthermore, an increase in speed rating (although the new Kodak films impose restrictions on this). The developer is not suitable for automatic printers on account of a resultant colour cast. Even the individual filtration of Neofin-developed films is more difficult than of those processed in standard developers. Yield of the 1 litre packet: 4 films either 135/36 or 120 roll film.

The following are the processing times for the most popular Agfa and Kodak films at 20 °C:

Tetenal Developing Kit N I For Agfacolor CN 17, CNS 80 S+L Solution	time	temp. °C	CNS 14	Orwo
Development	7—9	20±¼	6.5	6
Intermediate bath	4	20±½		
Wash	15	17±3		
Bleaching	6—8	20±1		
Wash	6	17±3	same	
Fixing	8	20±1		
Final Wash	10	17±3		
Wetting agent	1	17±3		

A final wash of between 8 to 15 minutes is required according to the water temperature. With such a procedure, processing of colour films is almost as easy as black-and-white. The storage life of unused developer amounts to 8 weeks, two weeks for used solution and the bleaching/mixing bath may be kept for six weeks.

Tetenal developing kit NK II

With this kit one may process the new Kodak films Vericolor II and Kodacolor II at home or in a small lab with relatively small risk. Since there is the possibility of carrying out development at a temperature of 30 °C, the temperature control is slightly less critical than at the standard temperature of 37.8, respectively 38.4 °C. The process consists of only three stages and intermediate wash, and is available gals) in convenient packs of 2×½ litre (0.132 US gals) and 1×1 litre (0.264) for the other necessary solutions. 12 35-mm or 120 roll films may be processed in 1 litre, which is a lot. Good storage properties enable one to keep the developer six weeks and the other solutions for two months. The process consists of the following stages:

Bath	temp. °C	time
Development	30 ±0.3*	8
Bleaching	34.5±4.5	6
Wash	34.5±4.5	3
Fixing	34.5±4.5	6
Final wash	30 ±5	3
Wetting agent	29.5±9.5	7

* or 38.4±0.15 3 min. 15 sec.

As a matter of principle, developer should be kept in well-filled brown glass bottles, or the vacant space should be filled up with an inert gas such as Tetenal Protectan in order to avoid premature oxidization. Storage data is based on such conditions. Plastic bottles are not suitable for keeping developer.
Small kits for ½ litre (0.132 US gallons) of working solution; capacity 3 35-mm films or same quantity 120 roll films; shelf life of the developer two weeks.

Tetenal developing kit NK

With the aid of this kit it is possible to process all films compatible with the Kodak C 22 process in a rapid and extremely simple fashion. It consists of only two baths, and an intermediate wash is not really necessary. The colour developer is made up in two packs of ½ litre each, whereas the bleacher/fixer is intended for one litre of solution. This is sufficient for a total of six 35-mm films, respectively, 120 roll film. Development is carried out for 12 to 13 minutes at 24 ±¼°C, whereas the following bleaching and fixing bath takes place at 20 ±1°C for eight minutes.

Film	ASA	dev.	stop bath	wash	fixer	Bleach/fix.	wash
Agfacolor CN 17	64	10	–	10	–	7	10
CNS 20	160	8	–	10	10	12	10
Kodacolor X	160	15	–	rinse	7	10	10
Ektacolor S	200	15	–		7	10	10
Ektacolor L	125	15	–		7	10	10
Vericolor II	100	21	3		7	10	10
Kodacolor II	80	21	3		7	10	10

The creative nude

Without a definite creative idea, there is little hope for the nude study today. No one is interested any longer in a straightforward depiction of the female body. The photographer must think up something original and set about shaping, designing his composition through and through.

Black-and-white photo top:

Jean-Louis Michel is a French photographer who is not unknown to our readers (see "Musée Français" in I PT 1/76). His style is immediately recognizable. He has specialized in the well-balanced nude composition and is a leading exponent of this kind of photography in France.

Colour page right:

A stilted nude interpretation by Peter H. Fürst, Cologne. The carefully controlled lineation would indicate that a fastidious operator was at work here.
Hasselblad 500 CM with 80 mm lens, Ektachrome X 120.

The model is no longer looked upon as such, but merely as a compositional means with, however, special privileges. In certain instances it is not necessarily regarded as the main subject; the nude figure can serve merely as an accessory.

Top:

This is an excellent example of how to introduce a degree of abstraction through hard copying, a process which is available to all.
Photo: M. Germann, Holland.

The famous, great names in the early years of nude photography such as de Dienes, Lartigue, Thomson, Gowland, Clergue, gave much thought to the problem of how to blend the model harmoniously into the overall picture. In those days design was the guiding principle and one should not forget this today if the entire subject of nude photography is not to be degraded into a playground for sexual perverts. In the publishing houses concerned with such material, one can follow the trends and it is here that editors have developed a sure feeling for what is acceptable and know when a picture "goes too far". On the basis of experience which editors gain in sifting through pictures which land on their desks each morning, they acquire an eye for proper, *valid* figuration. Since the human body is, after all, a "form" composed of lines and space it can, or rather *must* be made to harmonize with its surroundings (background, foreground, environment). Leonardo da Vinci drew the human figure divided up mathematically so as to master, and depict more lucidly, the various movements. Many text-books on nude photography give due consideration to these laws and also the good advice to compose according to the principles of harmony if one wishes to create live and, above all, natural pictures.

Composition is, however, not merely concerned with the digestion and execution of laws. It does not exclude, indeed, a total departure from such tenets; there is much to be said for artists' freedom in this context too. Only, one thing should not be forgotten: absolute freedom is unattainable, since nude photography is subject to many technical aspects which simply have to be mastered.

What creative means are valid

The simplest means of composition is to be found in lighting control. One can experiment at will and select the desired effect from amongst a variety of methods: cross lighting, spotlight, direct or indirect illumination, high-contrast lighting, low key, high key etc. These techniques are generally known and call for no further description here.

An additional creative element can be introduced through accessories, requisites, props, etc. They are an important aid adding interest to most photographs and are only found to be disturbing when they are not in keeping with the model, as colour or form are concerned. But who is likely to make such mistakes?

The most popular manipulative means were and still are to be found in various chemical processes and optical aids such as solarisation, tonal separation, off-beat filtration, hard copying, screen effects, multi-exposures and zones of unsharpness via vignetting masks, etc.

This unusual nude study taken by M. Germann, Holland, is, in actual fact, based on a very simple and uncomplicated idea. One might get the impression that the model was not all that happy about the pose, since who would enjoy such contortions? Yet, the whole thing goes to show that one does need not all that much in order to turn out a good picture: an "average" model, two lamps (here they were arranged indirectly) and a few requisites—the red chain—that was all in this case.
Sam Haskins is, without a doubt, a master in photographing the nude. Although we have not seen quite so much work from him in recent years, his great skill is still more than evident in the photographs he does take. Enlarged grain in this case is intentional and represents an essential creative element in his composition.

Left:

Light and shade at play
Photo: Michael Gnade, Düsseldorf.

Right:

Photo: Uwe Behrendt, Frankfurt.
Double exposure. The first exposure was taken in the studio (with a jumping model), the second created in the darkroom.

Another first from Linhof

Technorama

6x17cm

A compact camera of ultra-wide format

Technorama

for many photographers this is a dream come true: live panorama shots in the new ultra-wide 6×17 cm Linhof format on conventional 120 or 220 roll film. That means outstanding picture quality.

Technorama

a professional apparatus for totally off-beat perspectives, but without distortion. Super-broad views with live models in the foreground.

Technorama

a rapid-action, hand-camera affording interesting creative possibilities in a larger format. Horizontal or vertical shots –even under difficult conditions–are all within the scope of the Technorama.

Technorama

the camera for which there is hardly any viewpoint which is "impossible". Long after others have resigned, you can still be on the job–architecture, landscapes or reportage.

Negative format:	4 or 8 exposures 56×170 mm on 120 or 220 rollfilm
Lens:	90 mm f 5.6 Schneider Super Angulon
Angle of view:	90°
Shutter:	Compur 0 with 1 to 1/500 sec., aperture scale f 5.6 to f 45, x flash contact
Focusing:	Via helical mount, from 1.5 m to ∞
Features:	Built-in release as well as cable release, bot shoe for flash, film advance lock, exposure counter, depth of field indicator
Viewfinder:	Optical finder with reflected spirit level
Dimensions in mm:	265×170×110 (150 with finder)
Weight in g:	2185

Linhof

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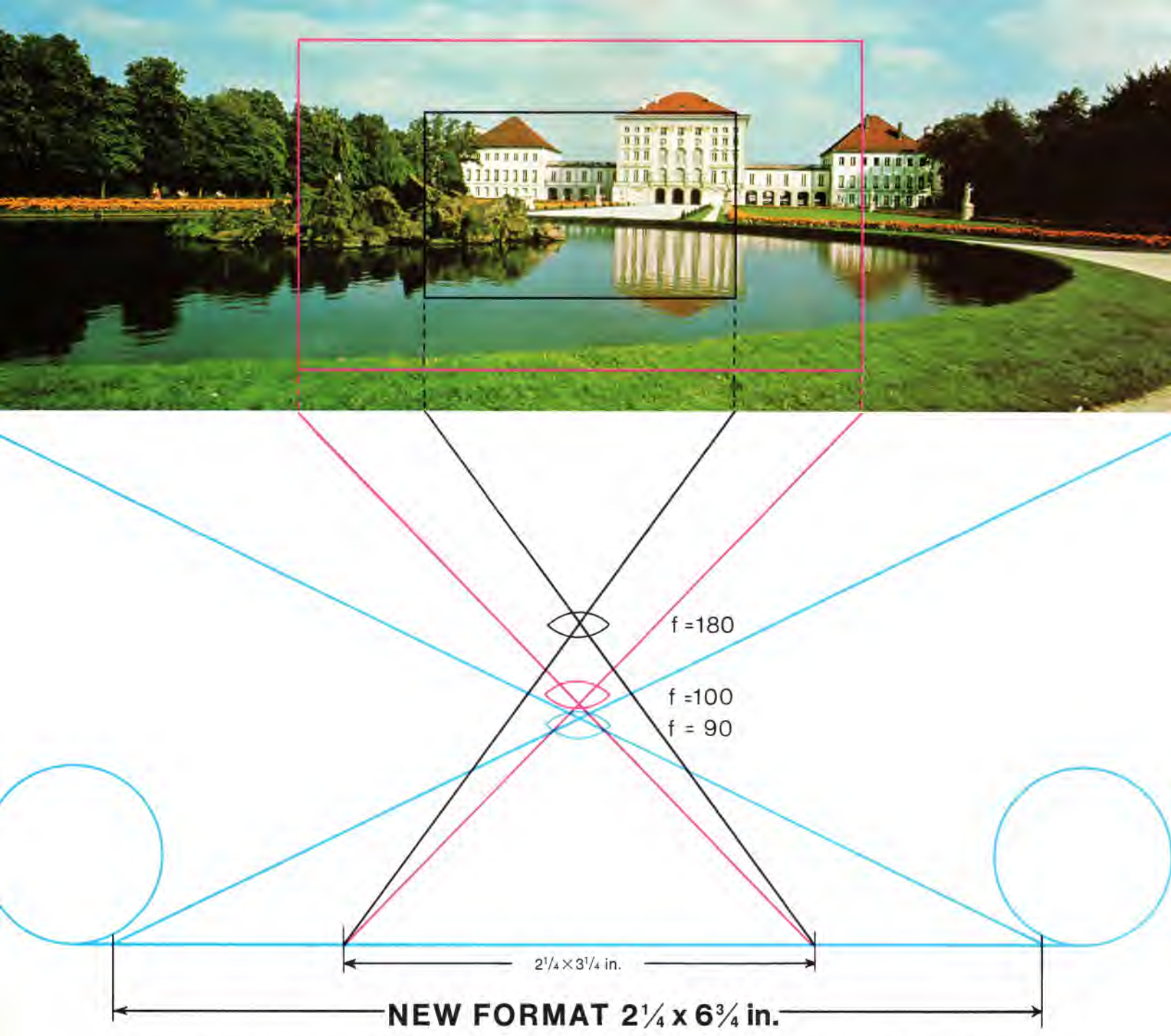

The above diagram clearly shows the decisive advantage which can be obtained from the same viewpoint: 2¼×3¼" (6×9 cm) camera with normal lens of 100 mm focal length and telephoto lens of 180 mm in comparison to the Technorama 90 mm lens on the 6×17 cm format. The enhanced pictorial effect in this case is most obvious.

PHOTO GRAPHERS OF THE WORLD

ALDERMAN DOES IT ALL

ALDERMAN DOES IT ALL

It began in a small American town with a man, a chair, and a camera in 1898. Today, the Alderman Company is probably the largest commercial photography studio in the world and is a total resource for visual communications of quality, taste, and innovation.

Headquartered in a southern city numbering less than 75,000 residents, the facility covers 4½ acres and employs over 450 people. Alderman grew up with the home furnishings industry which is centered in and around High Point, North Carolina, the "furniture capital of the world". Today, Alderman serves a diverse clientele that includes the nation's leading retailers, mail-order houses, hotel-motel chains, business incentive catalog producers, the building products industry, as well as the major furniture manufacturers. An impressive variety of merchandise is photographed at Alderman; 18th century reproductions, jewelry, fashion, carpeting, appliances, food, lawnmowers ... the list is nearly endless.

Alderman's location in the rolling Carolina hills has, in a unique way, contributed to its dramatic success. Because it is isolated from the commodities and services available in large urban centers, everything essential is under the Alderman roof: a 75,000 square foot warehouse; computer controlled shipping and receiving; vast studios with 60 foot concrete "infinity" areas; a gallery of 300,000 decorative accessories; and a fully equipped set construction department. In addition our facilities include film processing, mechanical art, type-

setting, color separation, dot etching, and film retouching departments, audiovisual and motion picture production, a bindery and an offset printing operation.

At Alderman, each project is a team effort ... from inception to final printed product. Art directors, interior designers, and photographers work on a continuing basis directly with the client or advertising agency. A design format, incorporating photography, layout, paper stock, copy and typography, interprets client objectives and, with his approval and constant participation, becomes a guide for the total project from beginning to end. Crafting expertise and technical skills in every department assure quality control throughout. This concept fulfills the particular requirements of the client and provides him with a product communication of impact, authority, taste and distinction.

Mr. Sidney Gayle, President, in assessing the company's operation, said, "At Alderman we do it all, and we constantly strive to do it all *well*. Everything from props to film processing ... from layout to printing ... all are 'in-house' to provide complete professional services to every client." *Bonnie Peterson*

Black-and-white pictures below:

Two examples of the studio's teamwork. The Alderman Studios can take on anything, and do it well.

Colour page right:

Food and furniture: Two photographic fields which normally call for strict specialization.
All the illustrations to this contribution were provided by the Alderman Studios, USA.

The enormous Alderman Studios. The very size of the building leads one to assume that this is an efficient company, since with such whopping overheads there would otherwise be no chance of survival (see main text).

Picture block below:

Top left:

The inside of the studio during shooting. The studio is so large that an entire prefabricated house can be set up on the spot. Such capacity enables the Alderman Studios to take on unusual assignments and then carry them out successfully. In the foreground, the illumination gantry is directly built up so that first results can be compared with the original scene.

Top right:

A further scene taken from the "inner workings" of the studio. The correct appearance of the set-up can be determined with the aid of sketches approved by the client.

Below left:

The prop store, a genuine warehouse full of thousands of accessories.

Below right:

A modern laboratory is also not lacking. This makes the Alderman Studios independent and fast working.

SIMPLE SOUND FILM SYNCHRONISATION SYSTEM

A simple low-cost interlock system which permits sound on conventional tape cassettes to be perfectly synchronised with virtually any standard 16 mm or 35 mm film projector has been developed by *Elf Audio-Visual Ltd.*, Slough, England. Known as the Elf Digital Interlock (see Fig. 1), it has particular advantages in the production of television news programmes where it allows accurate editing and preparation of news film to be accomplished at high speed. The system can also be used with sprocketed sound tapes, using two standard film projectors, one for sound and the other for film projection.

Basically the system uses a step drive motor driven from a power unit within an electronic control console which generates pulses or signals. The step drive motor is fitted within the casing of the Elf film projector to undertake the function of the existing drive motor. Any Elf projector modified in this way can still be used for showing films in the conventional way.

With this drive system the projector operates only from a synchronisation signal and in this way any number of projectors can be exactly synchronised.

If the synchronisation signal is derived from one track of a tape recorder, the film projector will be held in exact synchronisation with the moving tape. Changes in the tape speed will not lose synchronisation and the tape may be stopped, started and reversed without loss of synchronisation.

With a multi-track tape, several languages can be synchronised to one mute film. Using two projectors, double-band operation can be obtained without increases in the wow and flutter specification of the original projector design.

A key is provided on the console to advance or retard the film during running should this be desired. Where two or more projectors are synchronised, the film speed can be varied up to 50 frames/second.

The accuracy of synchronisation is better than 0.5% of total frame area and this is maintained even when the system is continually started or stopped in forward or reverse directions. Projection speeds are infinitely variable up to 50 frames/second, in forward or reverse, simply by altering the frequency of the control signal. Alternatively, the system can operate on mains supply frequency for a film speed of 24 or 25 frames/sec.

Sound added to any silent film

The Elf Digital Interlock system is so accurate that lip synchronisation can be obtained using an ordinary cassette tape recorder, so that synchronised sound can be added to a silent film without first having to put a magnetic stripe on the film. Stereophonic or quadrophonic sound can also be produced.

Because the system is so simple and so low in cost, sound films can now be produced for many purposes by companies and organisations for whom normal sound films would be too costly; this includes schools, colleges and universities. For example, a single training film or sales film can have separate commentaries in any number of languages, simply by recording each language on an inexpensive cassette. One of the first organisations to use the system in this way is a missionary society who are able to show one film with an infinite number of commentaries, one for each language or dialect they are likely to find.

If required, a number of projectors can be run synchronously. Further information from: ELF A. V. LTD., 836, Yeovil Road, Trading Estate, Slough, Berks, England. Telephone: Slough 361 23/4/5

technical news

The "Round Series": Linhof multi-purpose studio stands, I, II and III

Many photographers are now of the opinion that one can only work in an unrestricted, trouble-free fashion in the studio when the view to the front is not obstructed, i. e. the camera has to be the highest point.

These three Linhof multi-purpose stands have been designed for various applications and for different camera weights. It is therefore an easy matter to select the most suitable studio stand for the job on hand.

Two features which the "Round Series" all have in common are manoeuverability and rigidity. They come from the robust, three-armed base, which is fitted with casters that run in all directions and may be locked, and the rigid steel column of round cross-section.

Multi-purpose Studio Stand I

is a light and convenient stand for supporting 35-mm, video, medium-format cameras (also very light view cameras) in the studio up to a weight of 11 lb. Two different versions are available: steplessly adjustable, pneumatically-damped centre column *or* geared centerpost. The camera is attached via a flat 77-mm diam. plate. Working height: from 35/38 to 60/57 inch. The base may be separated from the column for easy transport by slackening a single screw (spanner supplied). This stand is also suitable for use as an adjustable projection table or as a support for powerful telescopes.

Multi-purpose Studio Stand II

is a universal professional stand for cameras up to a weight of 55 lb. The height adjustment is effected by means of a smoothly running rack and pinion drive with additional lock. A large star-shaped base guarantees absolutely rigid working conditions. Two swing-out tables provide a place to lay accessories. Fairly heavy movie or video apparatus or full-sized view cameras can be positioned with ease in this stand. The cameras may be attached either by means of the conventional camera screw/socket or 90-mm diam. clamping mount. Working height: 31 to 51 inch. Can also be supplied to run in a rail on the floor.

Multi-purpose Studio Stand III

is a professional stand which will meet the most exacting demands in the fields film, video and general photography. The extremely rigid construction guarantees absolute stability, even with the heaviest cameras of over 85 lb. Also in this case Linhof have chosen a massive star-shaped base as a foundation; it incorporates multi-directional casters which may be anchored in place by means of two foot pedals. The round centre column is fitted with a self-arresting crank drive which provides easy height adjustment and may additionally be locked. There is an accessory tray attached to the column to make matters even more convenient for the photographer. The camera is secured by means of the 90-mm diam. clamping mount. Working height: 31 to 55 inch (up to 82 inch with extension tube).

All three studio stands bear the stamp of Linhof's thirty years experience in designing superior studio equipment and are keenly calculated in price to give real value for money.

Linhof Record Flex tripod

Photography with the camera near ground level soon reveals the Achille's heel of practically every tripod. This is the reason which prompted Linhof to introduce an even further model—the "Record Flex"—which banishes this shortcoming once and for all.

Especially those photographers and movie-makers who work at close quarters out of doors will find a good friend in the Linhof "Record Flex" tripod.

The difference in comparison to a conventional tripod is that the legs may be spread out until they are flat on the ground or locked in place at any intermediate position; the struts are adjusted by means of buttons. This means that the camera may be positioned as low as 7 inch above the ground.

Two centerposts of different length and a universal camera plate round off the Record Flex tripod. These enable one to either work at a height of up to 13 inch or, if the longer centerpost is suspended in

an inverted position, one can bring the camera right down to ground level.

The solid metal head and rapid clamps on the inside of the legs cut vibration to a minimum, even at full bellows extension. Irrespective of the nature of the ground, the rubbertipped, respectively, metal-point feet ensure that the legs grip firmly.

If the legs become too slack in the head mount, the play can be taken up, thus maintaining freedom from torsional movement and giving the tripod a long service life.

Due to its versatility countless photographers will soon discover what a useful companion the Record Flex tripod can be.

Technical data:

Working height:

— with long column
93 in./150 cm
— with shorter column
43 in./110 cm
— fully spread out 7 in./ 18 cm
— column reversed 0 in./ cm

Pushed together for carrying
23.6 in./ 60 cm

Only the best tripod head is really good enough

An essential supplement to any tripod is, of course, a tripod head.

When choosing such an important item there are a number of important subjective points—and probably many more subjective views—which must be taken into account.

The purpose of a tripod head is to assist the photographer in aiming the camera precisely and to lock the latter firmly in place. For this very reason alone one should not be prepared to accept any compromises as far as constructional or material aspects are concerned. For example, time has shown that parts made out of plastic do not stand up to the wear and tear to which tripods are usually subjected.

The various clamping devices should not become loose after some time nor should any moving parts exhibit undesired play when they are unclamped, otherwise the useful life of the tripod head will be shortened.

The size of the head must bear a definite relationship to the weight of the camera and the strength of the tripod in question.

Special attention should be paid to the surface treatment or finish of the tripod head. A simple coat of paint is not enough; it must at least be stoved enamel, and it is better if certain parts are anodized or chromium-plated. All clamps which the hand has to grasp should be anatomically compatible and, expecially in the larger models, should only be required to carry out *one* clamping function.

The camera mounting plate must be of sufficiently large area and incorporate both sizes of internationally standardized camera screw. In the case of pan/tilt or video heads the mounting facilities should be arranged in such a way that the camera may be secured in a position where it is properly balanced over the tripod.

All the operational elements should be positioned in such a way that both left-handed and right-handed people are able to use the head equally well.

So much for the objective requirements. The subjective aspects are more numerous and somewhat more difficult to define. Here are a few of the most important:

There are photographers who prefer to work only with the ball-and-socket-type head. Others refuse to touch them at all.

Ball heads are only really suitable for certain types of still photography where it is desirable to level off the camera very quickly or swing the latter from a vertical-format position to horizontal or vice versa. Conventional tilt heads (with the exception of the 3-D type) are not so good in this respect. This is the reason why the pan-and-tilt head is usually to be found paired up with an adjustable view camera with its revolving back or a 2¼ square medium-format camera.

Then, the type of assignment with which one is most often faced is bound to play a role in the choice. Is the head intended purely for still photography or are motion-picture and video assignments also common? For each of these applications there are, naturally, special heads which have been adapted to the specific requirements concerned. For example, the dimensioning has to be appropriate to the widely differing camera weights. In spite of this, there is a considerable range of tripod heads on the market which can be put to equally good use in several fields.

Such sophisticated technical features as hydraulic damping may not be absolutely essential in still photography, but they are not an impediment in any way. Video heads with their automatic weight compensation are just as advantageous when used in conjunction with still cameras.

The exacting requirements of the professional as well as the manifold wishes of the amateur are given due consideration in the Linhof extensive range of tripods.

From the smallest amateur ballhead or movie pan-head right up to the most massive professional pan/tilt head or hydraulic video head—all models have one thing in common: they are backed up by Linhof's 80 years experience in the design of precision metal cameras and tripods. It also explains why, in the long run, they are actually better value for money: they simply *are* more reliable.

For still photography there are five different tripod heads: Mini Tiltop, Junior Tiltop, Precision Tiltop I and II, as well as Professional Ballhead III.

These three models have the following common features:

— Movement of the ball in all directions up to an angle of 90°, secured by means of wing nut or star knob
— Panorama movement locked with separate lever or knob (except for Mini Tiltop) and provided with degree scale
— Even when in "released" position, the movements do not exhibit undesired play
— Interchangeable camera plates (not Mini Tiltop) with $^3/_8$ and ¼ inch camera screws
— Mounting on tripod via internationally standardized screw or—in the case of larger models—also by means of Linhof clamp mount

Cameramen as well as photographers will be even more interested in the extremely sturdy and highly practical patent heads made by Linhof. In this series there is a choice of three different sizes:

Amateur Pan Head I, II and III for horizontal and vertical panning; scales are provided. Mounted on ball socket with separate clamping elements, panning handle (accepts cable release) may be inserted for right or left-hand operation. Has spirit level, camera mounting plate with T-slot; connected to tripod via screw or Linhof clamp mounts of 77 or 90 mm diam.

A model of similar appearance is the 3-Way Pan/tilt Head II; it has an additional lateral movement and a second spirit level.

Especially designed for 8 mm and 16 mm movie cameras are the following:

Junior Panhead I, Precision Panhead with/without compensating spring. In these models as well the tilt and panorama movements are locked by separate levers and the panning handle may be inserted for left or right-hand use. They are provided.

For commercial applications in fields such as film production, video and television the most appropriate tripod head is the double-hydraulic Linhof Cinematic II.

In the case of this sophisticated professional apparatus it is possible to preselect any variable amount of resistance separately for the vertical and the horizontal movements on account of the two built-in hydraulic "brakes". Scales assist one in the adjustment of the torque as well as setting limits to the degree of the panning. Naturally, both movements can be stopped and fixed at any desired point. The spherical-shaped form of the base enables one to correct misalignment of up to 15° in any direction if the head is inserted in the Linhof Professional Levelling Tripod. A removable camera plate with self-locking attachment facilitates changing the cameras. The panning handle may be adjusted as desired and inserted for left or right-hand use. Suitable for cameras of up to 22 lb.

With such an array to choose from, there will be little trouble in finding just the right tripod head also for your particular needs!

Comprehensive information about Linhof products

The new Linhof catalogue is ready. 360 illustrations and 160 pages of information present a comprehensive survey of the entire range of Linhof products. It is satisfying to discover that, in actual fact, all the equipment made by Linhof—from special aerial cameras through the various technical and monorail cameras to professional enlargers (not forgetting tripods and pan/tilt heads for the movie and video sector)—are listed in the catalogue. Suggestions are made as to the various combinations which can be effected between one item of equipment and another within the extensive accessory programme

The new Linhof catalogue represents an invaluable aid to commercial photographers as well as the photographic trade.

Polaroid test exposures for 5×7 in. view cameras

With the assistance of the Linhof reduction cassette it is perfectly feasible, just as in the case of normal sheet film holders, to attach the 4×5 inch Polaroid back to the

Linhof 5×7 inch cameras for checking the exposure, lighting or colour balance. The 4×5 inch Polaroid film holder is merely inserted into the Linhof reduction cassette and then handled just like an ordinary 5×7 inch sheet film holder. In this way the previous difficulties involved in focusing the larger camera have been cleared up.

Manufacturer: Linhof Präzisions-Kamera-Werke GmbH., D-8000 München 70, Rupert-Mayer-Str. 45

60 mm f 3.5 Zeiss Distagon for the Hasselblad

The new seven-element Distagon for Hasselblad cameras has a 66° diagonal angle of view, or 50° horizontal. This 60 mm f 3.5 lens with multi-coating is probably even a little better than the 50 mm f 4 lens as far as resolution and speed are concerned. The slight differences in focal length and initial aperture do, on closer inspection, bring a number of advantages for many photographers. Since the angle of view of the new lens lies between that of the 50-mm Distagon and the 80-mm "normal" lens, there is a less obvious "wide-angle effect" in the finished print. This can be quite favourable in certain interior shots. In landscape photography most of us prefer to take in a bit more than "normal", and for this purpose the 60-mm Distagon is just right.

For news and camera journalism a shorter focal length can make life easier. The fully synchronized Compur shutter enables one to use electronic flash at all the available shutter speeds. There must be many photographic assignments for which the 60-mm Distagon can equally well take the place of the "normal" 80-mm lens.

Technical data:

Focal length: 60 mm
Largest aperture: f 3.5
Number of elements: 7
Angle of view, diagonal: 66°
horizontal: 50°
Aperture scale: f 3.5 to f 22
Shutter speeds: 1 to $^1/_{500}$ sec.
Focusing from: 0.6 m to ∞
Length of lens: approx. 85 mm
Weight: 645 gramme

Distributor, Europe: Victor Hasselblad AB., S-Göteborg
USA: Paillard Inc., 1900 Lower Road, Linden N. J. 07036.

Braun battery flash units—a compact alternative

There is no reason why even professionals should not fall back on small, battery-operated flash units for jobs such as photomacrography or as a fill-in light.

The Braun series 17B/BC, 23B/BC and 28BC/BVC represents a comprehensive flash programme of compact units which are powered by dry batteries (1.5 v AA size battery) and are capable of fulfilling even professional requirements. They all have the following features in common: modern, horizontal reflector, convenience of operation, small weight, and a standard of quality which makes a two year guarantee possible.

The model 17B (with a guide No. of 55 for 100 ASA film) has a range of 19.6 ft. at f 2.8. The 17BC version has an optional computer. From two AA-size batteries one can extract up to 190 flashes. Both models are of very slight weight and not much larger than a packet of cigarettes: 7.5×6.2×4 cm. A little more powerful is the 23B (or 23 BC with computer) with a guide No. of 75 for 100 ASA film. A subject at 13 ft. can be properly illuminated on computer operation, and up to 250 flashes may be obtained from the four batteries. Of even more interest to professionals is the 28 BC and 28 BVC with their guide No. of 91 for 100 ASA film, giving a range of 32 ft. at f 2.8 (or guide No. 28 for 21 DIN giving range of 10 m). When switched to the computer mode, one has the choice of two working apertures. The energy-saving thyristor circuitry of the 28 BVC permits one to extract up to 3000 flashes from a set of batteries and, when working close up, gives a recycling time of only 0.3 seconds.

Manufacturer: Braun AG., D-6000 Frankfurt, Rüsselsheimer Straße.

Distributor: Braun North America, 55 Cambridge Parkway, Cambridge, Mas. 02142.

Audio-visual aid in compact form

The idea is to provide additional information to each photo as it is shot. The "Compur-dict" recorder is inserted into the accessory shoe of the camera and is particularly useful at sports events, receptions, conferences and on other occasions where one has little time to note down the names of persons or other relevant data. It is only important to remember to give the frame number before making a comment, but one soon gets into the habit.

It is a perfectly practical proposition to combine the Compur-dict with a camera since it weighs only 275 gramme, that is under 10 oz., and may be operated with one hand. The mini-cassettes used provide a recording time of 2×15 minutes, which means almost a

minute for each exposure of a 35-mm film cartridge. Also the cine-enthusiast can record a few remarks on the side as he shoots.

Manufacturer: Carl Zeiss, 7082 Oberkochen, Postfach 1369/1380.

Ink pad for marking PE prints

Much has been said about the problem of stamping plastic coated paper. At last Tura can supply a pad and ink kit with which one can mark the back of such prints in a way that the stamp is resistant to water or chemicals.

Data: Colour B 183/2671 (blue); bottle of 28 ml with brush; ink pad P 1 with two replacement stamp plates and knife, size 9×16 cm.

A kit consists of: 1 bottle of ink, 1 pad and two replacement stamp plates.

Distributor: Turaphot GmbH., 5160 Düren 1, Postfach 496.

Jet-Lux Super Safe 1000

It was with utmost safety in mind that the Hedler Jet-Lux Super Safe 1000 was created, one of the most modern, technically advanced cine/still lamps to be found on the market.

As far as appearance is concerned, it would appear to take the line set by its predecessors, the Jet-Lux models 1250 and 1250 SN. The technology incorporated, however, is quite new.

First of all there is the special reflector with a four-spring retaining device for holding a safety net, safety glass or safety filters for light conversion or special colour effects. (Made by the glassworks Schott & Gen.) Not only can these attachments be easily changed but also the U-shaped quartz halogen lamp may be replaced without any tools.

All these various attachments, in conjunction with the special reflector, ensure that should a halogen lamp burst—which is pretty unlikely anyhow—protection in all directions is afforded from flying glass.

Also new are other parts such as the motor for the blower as well as the supporting base for the entire construction of the apparatus, a special heat-absorbing plate made by Rosenthal. Both contribute towards a maximum degree of operational safety. The Jet-Lux is available in a choice of three colours.

Manufacturer: O. Hedler, Borngasse 33, D-6251 Runkel/Lahn.

Gossen extends range of accessories for the Lunasix 3

With the inclusion of the "Repro-attachment", an accessory for exposure measurement in copying, the range of adapters for the Lunasix (also known as "Luna-Pro") has now been increased to five. The Lunasix 3 system therefore consists of the following:

a) The Repro-attachment facilitates exposure measurement in reproduction work and also permits transmitted light to be measured.

b) The Tele-attachment reduces the angle measured from 30° to 15° or 7.5°.

c) The Lab-attachment helps one to determine the correct exposure when printing in the darkroom.

d) The Micro-attachment is designed for exact measurements in photomicrography.

e) The Probe-attachment enables one to take a reading from a very small, inaccessible spot in, for example, photomacrography, from a focusing screen and for density and contrast measurements.

The procedure with the Repro-attachment is as follows: the attachment is snapped into the front of the Lunasix forming a measuring unit which is laid on the copy at various points. If the illumination proves uneven, it can then be corrected. The next step is to determine the correct exposure for copying, using the green mark above the LV window. When the attachment is placed on the Lunasix in a reversed position—that is pointing downwards—it may be used to take a reading of transmitted light from a lightbox or contact copying apparatus. In this csea the uniformity of the illumination should be checked by taking readings in the centre and corners of the opal sheet.

Manufacturer: Gossen GmbH., D-8520 Erlangen, Postfach 1780.

Distributor USA: Kling Photo Corp., 25—20 Brooklyn-Queens Expwy. W., Woodside, N.Y. 11377.

A new printer: the Durst ACS 801

The ACS 801 is the first model of a new, supplementary series of printers which fully meet those demands which are likely to be placed on it in daily practice.

The all-transistorized printer functions on the subtractive principle employing diffuse quartz halogen lamps and dichroic filters. It can measure either integrally on the basis of previously programmed values or work with an instant fixed filtration. Further, the exposure time can be permanently set or individually measured. Available as an accessory is the "sample and hold" unit by means of which the first negative of a film is analysed electronically. The values thus obtained are then "held" for the rest of the same film. Depending on the actual equipment of

the printer the following modes are possible:

a) Manual setting of storage and slope.
b) pre-set plug-in units,
c) pre-set units via switch.

An innovation is the fully automatic negative handling. One uses the ACS standard negative stage for cut negatives and short strips. Even when the negative carrier is inserted, pressing a foot switch enables one to inspect the negative by means of the reflex viewer. For 126 and 110 film there is, furthermore, a fully automatic negative feed with splice feeler. With this attachment the printer can achieve a very high output. The lenses are mounted in a turret (up to 8 lenses).

The printer is designed to work normally with two widths of paper, but can handle all current guages from 7.6 to 20.3 cm (2.9 to 7.9 in.).

The transport of the paper is controlled electronically and may be set for speed ranging from 5 cm to 25.4 cm (1.96 to 10 inch). Choice of paper border (i.e. with or without) may be selected from the control panel.

A ribbon-type back marker has been developed for borderless or bordered prints. It is also possible to mark a print "end of order", and further equipment is available for a bonus print as well as greetings card production.

Manufacturer: Durst (UK) Ltd., Longmead Industrial Estate, Epsom, Surrey, England KT 19 9 AR.

"CF Planet" mains-operated flashlight pointer

This illuminated "arrow pointer" is particularly handy for guiding the attention of the audience at

slide or movie shows in very large rooms.

With the aid of a special lens one can throw 6 various signs onto the projection screen (arrow, circle, cross, dot, etc.). Even by daylight the signs are still clearly visible. The symbols are changed by turning a milled ring. The helically focused lens may be locked in such a way as to prevent it being shifted out of focus inadvertently during a performance.

It is switched on by means of a press button, and laying it down automatically cuts off the lamp. Since it is not heavy, it may be held in the hand for a lengthy period without tiring. Changing the bulb presents no problem.

Technical data: 220 V/60 W Ba 15 s; size 7.8×2.3 inch.

Distributor: CF Cine & Foto GmbH., 5000 Köln 90, Amselstraße 23.

Control unit "PG 100 Automatic"

Is intended for the projection system "Braun Tandem Professional". This is an automatic version and a further development of the well-known PG 100 control unit for film projection.

As previously, all the various functions of the Braun Tandem Professional can be programmed, e.g. fade-over and cutting, fade-in, fade-out, superimposing. Switching is carried out by means of manual button, automatic timer,

cassette/tape recorder with synch. pulse.

A new feature to be found in the PG Automatic are the facilities for endless projection without supervision. (E.g. automatic rewind to the starting position and recommencement of the show after a programmed interval).

Braun D 300 "Autofocus"

In the "Autofocus" model, Braun are offering a further variation of the D 300 which is designed to focus the 85 mm f 2.8 Will Magnon lens automatically. This is by no means a common feature on slide projectors of this type and means, in practice, that even the first slide of a show can be focused remotely by means of the control apparatus held in the hand. The

remaining slides are then focused automatically by means of two photo-resistances.

Distributor: Braun North America, 55 Cambridge Parkway, Cambridge, Ma. 02142.

"Animatic" fader for slide projectors

The "Animatic Convar" is designed, in the first place, for use with two Kodak Carousel S-AV 2000 projectors. In the case of the latter the Animatic Convar is plugged in directly to the 12-pin multiway connector.

Automatic projectors of other types may also be used, but it will be necessary to have an appropriate connection fitted subsequently. The Animatic Convar permits one to carry out all manner of dissolving or fading effects. Soft fade over, with any length of steplessly variable fade time, cutting, fade in—either gentle or abrupt, reverse projection, sandwich projection (simultaneous projection of two pictures), etc.

Operation of the dissolve is carried out via a remote control cable with sliding switch. All desired effects may be recorded on magnetic tape in order to produce a perfectly synchronized sound slide show.

The standard version of the Animatic Convar control outfit comprises the control apparatus itself in a metal housing, the 12-pin plug for connecting up to the projector, the remote control cable with sliding switch and the tape recorder cable.

Distributor: CF Cine & Foto GmbH., 5000 Köln 90, Amselstraße 23.

Noris Norimat "Special D"

What has made the Noris Norimat system of synchronous "sepmag" recording so popular? The reasons are the low cost and the excellent sound quality. On the one hand it is still possible to make alterations to a finished film which has already been provided with sound and, on the other hand, a simultaneous sound recording presents no problems.

The Noris Norimat Special D is a logical further development of the Norimat cassette-type recording system. Although the "Special D" is identical to the Norimat Electronic, it does not have the magnetic sound playback head, and it is thus more favourably priced. It should therefore appeal, in the first place, to those movie-makers who prefer to add sound to their silent films afterwards. Since it is a dual-format projector, it is suitable for the post-recording of sound in the formats super 8, single 8 and standard 8. The Noris Norimat D is an interesting alternative to the magnetic sound projectors.

Technical data:

Film format: super 8, single 8 and normal 8. Change between formats is carried out by interchanging the sprocket wheels and the projector gate plate.
Lens: 16.5—30 mm f 1.3 zoom lens; alternately, the superb 12—30 mm f 1.3 Schneider Xenovaron.
Lamp: quartz halogen with integral dichroic reflector, 12 V/100 W lamp.
Reel capacity: up to 180 m/600 ft.
Power: electronically regulated motor.
Film transport: 18 and 24 f.p.s.; may be switched over electronically when stationary or whilst projecting.
Film threading: automatic, from reel to reel.

Counter: four-digit, advances at every third frame, non-slip due to sprocket drive.
Special features: built-in cutter for squaring up film end, height adjustment, illuminated main switch panel, frame line adjustment, central switch for forward and backward projection with or without lamp on, European sockets for headphones, supplementary loud-

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tripods for the photographer who demands the finest equipment available. Made to the well-known LINHOF quality standards, their excellent reputation is based on superb construction, maximum precision, advanced design and exquisite finish. LINHOF does not compromise when quality is concerned–superior materials and precision engineering are the reasons behind the proven reliability of the LINHOF tripod range.
LINHOF tripods meet the specific needs of professional photographers and advanced amateurs. Their top quality features include solid all-metal construction, instant leg clamps, hard anodized leg sections and many other advanced engineering details.

Sturdy one-piece all-metal leg mount collar guarantees vibration-free camera operation.

LINHOF Precision Tripod Heads, the ideal complement for any tripod.

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Rapid-lock clamping levers for firm lock at any extension.

Hard-anodized hydronalium alloy profiles, rugged and corrosions-resistant.

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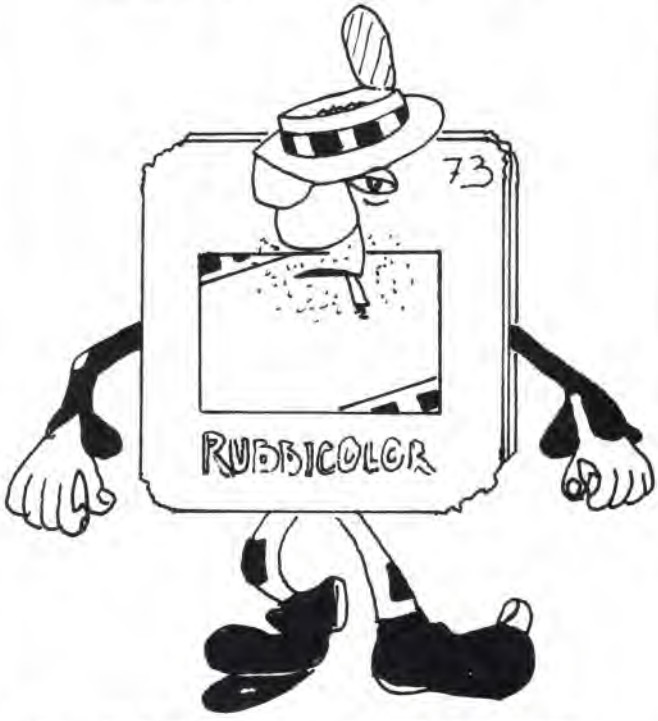

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Telegram: VAUDIA

Our English representative:Photosound Productions Ltd
TELEPHONE 01-886-4911/4615

speaker and remote replay apparatus, lamp economizing circuit, external film rapid rewind.

Sound unit

Type of sound unit: Noris cassette recorder with dual track system incorporated integrally within the housing. Synchronism between picture and sound is guaranteed through having the same power drive. (Patent applied for). Separate motor for tape take-up and for driving the rapid forward and reverse operations—independent of projector running.
Synchronization: ≦ 0.25 achieved by means of double capstan drive (two flywheels); synchronous reverse of magnetic tape and film.
Tape speed: at 18 fps = 4.75 cm/sec., approx 1.87 in./sec.; at 24 fps = 6.33 cm/sec., approx 2.49 in./sec.
Component parts: 23 transistors, 18 diodes, 2 integrated circuits.
Frequency response: 40—12500 Hz (according to DIN 45500).
Distortion factor at 1000 Hz: ≦5%.
Overdriving safety factor for all inputs: 28 dB.
Output: 4 Ohm, 6 Watt.
Modulation: manual or automatic, LED indicator.
Microphone: special Noris microphone with press-button operation for fading the sound in or out, shielded against wind.

Distributor USA: Karl Heitz Inc., 979 Third Ave., N.Y. 10022.

Chinon 1200 SM Direct Sound

More technology and more fun is what one is offered through possession of the new Chinon 1200 SM super 8 sound camera. It is a top-flight movie camera which incorporates all the features one would expect of a perfect silent camera and, in addition, can cope with a number of other problems such as live sound recording.

Technical data:

Lens: 6—72 mm f 1.8 lens with motor-driven 12×zoom (speed of zoom steplessly variable).
Macro-setting: 0—10 cm.
Interval timer: 1—60 sec.
Viewfinder: microprism centre, green LED for "sound on", red indicator for end of film, red LED lights up in macro mode, film transport signal, indicator for over/under exposure, indicator showing diaphragm is being opened, resp., closed down electronically, indication of working aperture.
Eyepiece: diopter correction, rubber eyecup.
Metering: automatic TTL exposure control, manual override for correction to exposure (over or under), BLC correction.
Film speed ratings: ASA 24, 40, 100, 160.
F.p.s.: 1, 18, 36.
Sound cassette: 1, 18.
Sound system: built-in sound recording amplifier, high/low switch for level of input, automatic sound modulation (also manual control of level with scale), simulation button, sockets for microphone and earphone.
Sound control diode: located on the front.
Batteries: 9 V (6×1.5 V alkaline "A").
Dimensions: 243×224×83 mm.
Weight: 2.45 kilo/5.4 lb.

Distributor, Europe: Chinon (Deutschland) GmbH., D-8500 Nürnberg, Postfach 170352.

Further technical features for the latest Bell & Howell "Filmosonic" sound movie camera model 1235

The original model 1230 has now been enhanced by the following advanced features: automatic fade-out/fade-in by means of press button, motorized zoom, monitoring control, manual correction to automatic aperture under difficult lighting conditions, sound recording control, film travel indicator, and rotary-disc-shutter metering.

Coordination between the camera running speed and that of the sound system is taken care of by the loop scanner. A steplessly variable control system reacts immediately to the slightest alterations in the loop and, since only minute corrections are then necessary, uniform film advance is guaranteed; this, in turn, has

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equally beneficial effects on the sound quality and exposure. Loop scanners with the stop-and-go-type of circuitry result, inevitably, in "graduated" movements.

Extremely rapid stabilization of the film advance speed and the fact that the sound flywheel has already reached maximum revolutions at the "Test" position of the release button ensure that the sound recording is always of a uniformly high quality. Within 300 milliseconds—that is less than 6 frames—of starting a scene, this balanced state of affairs has been reached.

An interesting new feature of the 1235 is the automatic fade-in/fade-out device which, instead of a separate drive for altering the exposure steplessly, utilizes the existing exposure system. To dissolve, the "fade" button is pressed shortly before the end of a scene, and within about 3 seconds the aperature has been closed by 5 f-stops. If the button remains pressed down, a further reduction of aperture value (to the smallest f-stop of f 56) takes place after a lapse of 3 seconds. One can check progress by observing the under-exposure diode which begins to glow red when the diaphragm has been closed by an amount of 3 f-stops.

To fade in: although the same device is used for this purpose as well, the procedure has to be changed, since the diaphragm must be fully closed before commencing

to shoot. One presses the "fade" button (the aperture becomes smaller) until the LED lights up. Continued pressure on this button closes the diaphragm even further so that a "blind fade" is achieved. On releasing the camera shutter, the picture then appears "out of the darkness". The diaphragm opens progressively, the LED extinguishes and the film begins to receive the correct exposure.

A further feature of the Bell & Howell 1235 is the automatic exposure system with its high-efficiency, rotary shutter. Any deviations are compensated for within 0.2 seconds. If, before shooting a new scene, one depresses the release up to the "test" position and waits a jiffy, even this 0.2 second "delay" is done away with and one gets correctly exposed film right from the very first frame.

Another convenient idea incorporated in the metering system is the aperture contrast switch. It enables one to override the automatic metering and alter the calculated exposure to allow for pronounced shadow or contrasty lighting.

Power-drive for the lens is offered as an alternative to manual zooming. The motor-zoom may be operated while the film transport is stationary. It is shielded in such a fashion that the quality of the sound recording is not impaired.

The Model 1235 is fitted with the well-proven Bell & Howell "Focus Matic" rangefinder. Through tilting the camera down to the base-point of the subject to be photographed and pressing the "Focus Matic" button, the distance is automatically measured. This value is then transferred to the lens mount.

Additional improvements to be found on the Model 1235: Just as in television, an LED beneath the lens lights up and indicates to the "actors" that they are being taken. An earphone offers a check on the sound recording during shooting. A volume indicator visible in the viewfinder merely shows whether the sound level being recorded is sufficiently high.

By employing the "Test" position of the release trigger, it is possible to determine the most favourable place for the microphone even before shooting has commenced.

Manufacturer: Bell & Howell Co., 7235 North Linder Ave., Skokie, Il. 60076.

A studio-proven projection system

NORDIC FRONTPRO HCS

Compact system with built-in generator, pilot lamp, and slave photocell.
Specially-coated high-reflexion screen sets new standards in projection brilliance.

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F 3

GBT PHOTO CONTEST 1976 FOR AMATEURS AND PROFESSIONALS

1st Prize

2nd Prize

3rd Prize

4th Prize

5th Prize

Since our 1972 photo contest turned out to be such a success, we have decided to launch a new competition in order to get to know the work of more of our readers and place International Photo Technik at their disposal as a kind of forum for discusion.

Once again a number of firms in the photographic industry have said they are prepared to provide prizes for the winners. Linhof will be offering the main prizes, and the firms Agfa-Gevaert, Fuji and Kodak will present film as further awards. Grossbild-Technik has agreed to put books and calendars at the judges disposal so that, all in all, there will be quite a number of interesting prizes to be won. Possibly even more important for some: the prize-winning pictures—in black-and-white and colour—will be published in the "Photokina" edition of IPT.

Conditions of entry:

Three subjects have been selected so that as wide a spectrum as possible could be covered:

A **The nude in black-and-white and colour**

The following points will be judged, and in this order:

1) Photographic technique
2) Composition and overall design

B **Advertising**

This topic is intended, of course, for commercial photographers. Should any so-called "serious amateur" feel he can handle his subject in a professional fashion, his work will be given "serious" consideration. Picture entries from such persons must, however, be clearly marked with the letter "A".

C **The creative photograph**

We have intentionally left the heading for this category fairly general so that, above all, amateurs may feel free to express themselves in their own way. One restriction is imposed, however: purely experimental photography is not desired here, since the judges will be basing their opinions more on how the photographers has exercised his fantasy and employed his special skills on real subject matter.

Formats:

Transparencies: 6×6 cm, 6×7 cm, 6×9 cm (from 2¼×2¼ in. to 2¼×3¼ in.), 4×5 in., 5×7 and 8×10 in. Please send transparencies mounted *only* in passe-partout with acetate sleeve. Slides framed *in glass will not be judged* and cannot be returned.

Paper prints:

(colour and black-and-white) minimum size 8×10 in., maximum 11×14 in. on glossy paper, preferably plastic coated.

The publishers are not in a position to accept responsibility for work sent in. It is the practice of our House, however, to treat pictures with due respect and file them away carefully. We can only return entries when sufficient postage is enclosed in the package. Those pictures which receive an award become the property of Grossbild-Verlag.

The publishers also reserve the right to publish additional, non-prize-winning pictures—also outside the framework of the contest—but for these the customary fees will be paid. The decision of the jury and the publisher is final.

The jury:

Nikolaus Karpf, Linhof; Dr. Gareis, Agfa-Gevaert; F. Pangerl, Journalist; Manfred Weinig, Management and Advertisement GBT.

The winners will receive notice in writing and their names will be published in International Photo Technik. Participation in the contest implies that one has accepted these conditions.

Prizes:

1st Prize: Linhof 220
2nd Prize: Linhof Kardan Standard
3rd Prize: Linhof Copying Stand
4th Prize: Linhof Tripod
5th Prize: Universal Tripod
6th—20th Prize: Books (GBT)
21st—50th Prize: Films (Agfa, Kodak, Fuji).

Closing dates for entries is 30 August 1976

Jewellery

shown to advantage

Inge and Arved v. d. Ropp

Inge and Arved von der Ropp—this is a mother-and-son team in Cologne—have specialized in the kind of photography which requires painstaking care. They have a reputation for only delivering the best material, no matter whether they are asked for a transparency or a colour enlargement from negative film. Such master craftsmanship is a delight for all those who are concerned about the shoddy workmanship to be seen nowadays—often masquerading as "art". How many trained photographers are still capable of showing off to advantage such difficult subjects as jewellery? For such assignments it is necessary to use a large-format view camera and take sufficient time in order to do real justice to the objects concerned and present them just as the client wants.

The "secret" for the success of the von der Ropp team: highlight-accentuated lighting (tungsten), the use of appropriate accessories—carefully selected for colour, since any colour cast caused by the surroundings might result in an adverse or misleading effect on the hue of the gems, etc.

Intentional control and manipulation of the zone of sharpness is, of course, of utmost importance. Through such means one can emphasize certain parts of the motif or, alternatively, cause them to recede. One final tip: they develop their own films, since only then can they be sure of getting the colours to come out the way *they* want them.

Top:

On account of the black background, the rings can be better appreciated.

Colour page right:

The colouration and illumination in this picture have but one aim: the accentuation of the details and material. Thanks to the use of a large film format, none of the desired high resolution is lost, all of which goes to foster sales.

Both photos: Inge and Arved v. d. Ropp, Rodenkirchen near Cologne.

The extreme LANDSCAPE

For calendars, coloured murals and posters for travel agencies, one requires landscapes of a particular kind. There are three points which call for special attention here: viewpoint, perspective and lighting.

Viewpoint

Dramatic landscapes require, obviously, a dramatic camera angle. The photographer must take extra trouble, be prepared to leave the convenience of the asphalted road and go off in search of less conventional motifs. Once he has found something to his liking, the first step is to determine the camera standpoint (possibly with the aid of the Linhof Universal viewfinder); an emphasis of the foreground will require the camera to be set up at a low height with the lens standard swung forward accordingly. On the other hand, a powerful telephoto lens is the right answer if he wishes to compress the subject space. Provided the camera construction permits it, the use of a lens of greater focal length is to be recommended anyhow, since distant objects are reproduced larger and more realistically and it enhances the general impression considerably. If he wishes to dramatize wide open spaces, a wide-angle lens is more appropriate. Focusing and picture framing then call, however, for closer attention and it is best to select a slightly elevated viewpoint.

Perspective

The viewpoint influences, to a large extent, also the appearance of the perspective. If, in addition, the camera standards are swung, perspective can be manipulated—either to correct, for example converging verticals or, for the sake of exaggeration. Whenever the Scheimpflug law is exploited to re-locate the depth of field for greater sharpness, this also benefits the perspective: the foreground is reproduced larger.

The question of light

Landscapes taken under "normal" sunny conditions tend to appear flat and boring. Extreme landscapes demand unusual lighting, such as, storm or strong back-lighting, low oblique light with dark background, the warm hues of early morning or late evening. Finally, the photographer has all kinds of filters at his disposal, for example, the "Chromo-filter" which enable him to influence the colour in any part of the picture.

The manipulative means are multifarious indeed: even a polarization filter can be used very creatively when one employs it with understanding.

The examples accompanying this short commentary may serve to inspire some of our readers to get away from the more "conventional type" of landscape. Although such pictures may not appeal to average taste, the intention is to show more enlightened readers that it is not all that difficult to create extreme landscapes.

Top:

"Landscape in white" taken by Alexandre Forjaz, a young Portuguese photographer who is at present living in Brussels. With the aid of telephoto lenses it is likewise possible to arrive at an extreme interpretation in landscape photography. Space is compressed, the lines are exaggerated.
Asahi Pentax 6×7 with 200 mm Super-Takumar, $^1/_{15}$ sec. from tripod at f 22, original film Agfachrome 50 S.

Below:

In the valley of Verzasca, Tessin. The most striking thing about this photo is the low viewpoint and the astonishing rendition of the stone structure. A good wide-angle lens was needed in order to achieve such total sharpness.
Photo: Toni Schneiders, Lindau-Schachen. 4×5 in. Super Technika with 75 mm f 5.6 Schneider Super Angulon.

Top:

A composition from the Agfa Gevaert picture library taken by Harald Blondiau.
5×7 in. Linhof Kardan Color, Agfa CN 17 enlarged on to MCN paper.

Colour page left:

The vast expanse of the sea as seen in an extreme interpretation by Rolf Schlosser. Although this is not a landscape in the strict sense of the word, it is definitely in keeping with the notions described in the main text.
Hasselblad 500 C/M Agfacolor 80 S Professional, printed on Agfa Gevaert colour paper.

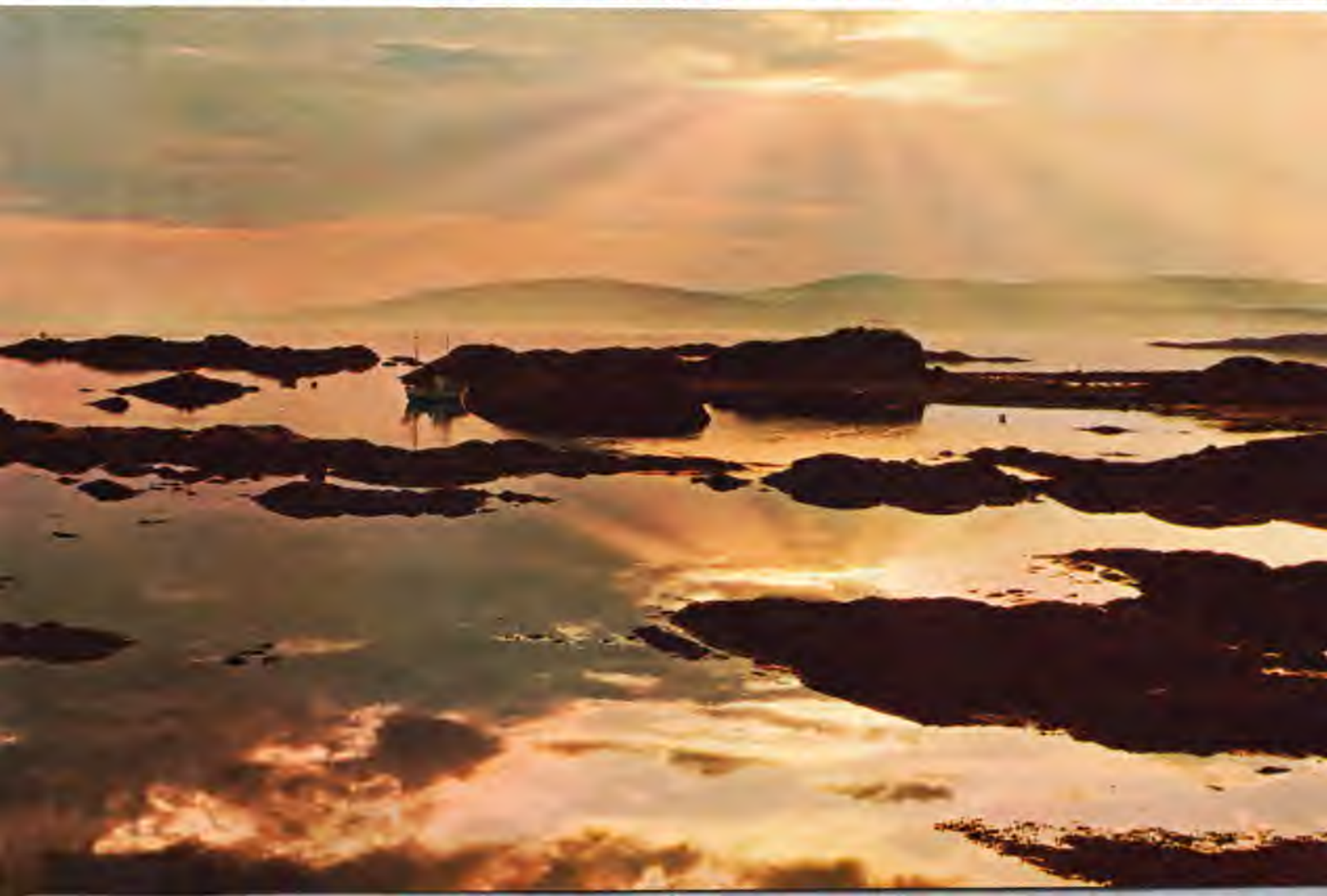
Colour page left:

top:

A famous photo taken by Dr. Walter Boje, which, in spite of its date, has lost none of its dramatic effect.

Below:

It is not always easy to say exactly where the border lies between a beautiful picture and sentimental trash. Doris Weschkalnies has created, however, a photo which is most unlikely to be labeled as "kitsch". Fine differentiation in colour tones, obtained from Agfacolor 80 S Professional, has contributed greatly to the quality of this picture.



Colour page right:

Robert G. Everts succeeds time and again in lending landscapes a new dimension. Such an extreme viewpoint calls for a certain amount of courage, since who would give the foreground, which appears unimportant at the first glance, so much space?
5×7 in. Super Technika V with 210 mm Schneider Symmar, Agfachrome 50 S.

Top:

Mountain landscapes, when taken just „straight", can be rather dull and uninteresting. If the photographer makes clever use of filters though (a red filter in the present case), an element of drama can be added to the scene.
Vilém Heckel, Czechoslovakia, decided for this method of pictorial enhancement.
4×5 in. Super Technika with 180 mm Schneider Symmar, Agfa Isopan IF.

Below:

A scene in the Andes taken by W. Wachter, Liechtenstein.
4×5 in. Linhof Color, 210 mm Tessar, $^1/_{10}$ sec. at f 22.

OPTICAL SOUND TECHNOLOGY

Edison's first sensational success with the recording of sound waves was the invention of the phonograph in 1877. A membrane, to the centre of which a needle was secured, was vibrated by speech, thus transferring an impression to tin foil on a revolving drum. By the same means the sound could be extracted from the surface of the foil and made audible. In contrast to this mechanical recording (stylus or needle sound), Poulsen invented magnetic recording in 1898 in which sound waves were converted into periodic variations in magnetic field in a steel wire. Then, in 1901, Ruhmer was the first to record sound photographically on film through employing "speaking arc lamps"; such variable density recording would then be reproduced via a photo cell. This was, so to speak, the first "optical sound system".

In those days, all three solutions failed in practice, because the amount of energy available for the direct recording (from microphone) as well as for the indirect reproduction (via membrane, magnetic head and photo cell) were just too small. It was only after the invention of the amplifying tube and the improvements of the other audio frequency components that it was possible to raise the level of optical sound recording to such an extent that it became technically and commercially feasible. Responsible for this progress in the years from 1919—1922 was a "Triergon" of inventors consisting of Vogt, Engl and Massolle. It was not until 1929, however, that optical sound recording began establishing itself commercially. Two ways of recording sound with light are feasible and have actually been put into practice. In each case retrieval is obtained by a reproduction system incorporating a photo cell, amplifier and loudspeaker.

a) The variable *density* sound track in which the sound waves are exposed on to film in the form of fine slits of different blackening.
b) Variable *area* recording in which the photographic sound track consists of clear and opaque areas, the complimentary widths of which vary from point to point along the track.

So that the highest frequencies of the audible region (about 16—16000 Hz) can be recorded and reproduced, the bundle of light rays which expose the track must have the shape of a very fine slit; this can be easily gathered from the following calculation: the standard speed for 35-mm-gauge film amounts to 24 fps = 456 mm/sec. This means that on the film an entire wavelength of sound of 10000 Hz = 456 ÷ 10000 = 0.045 mm. However, in order to record, in a more or less accurate fashion, the path of an oscillation of this minute length (respectively, to still detect differences in density within such a wavelength at the reproduction stage) the width of the light slit should not exceed ¼ of the wavelength (10 μ for 10000 Hz). For playing back higher frequencies it must be even smaller.

One produces such thin light gaps by reducing the size of an intensely illuminated mechanical slit via a so-called "sound head lens". How does one create, however, the modulation of the variable density or variable area sound track on recording?

A variable density sound track is produced either through altering the brightness of the light source in front of the sound head lens or the light current within the optical system in harmony with the sound waves. To control the light current one formerly used an inertialess Kerr cell; later the variable density sound track was superseded by the variable area system, because the latter called for less critical treatment as far as exposure and chemical processing were concerned.

Variable area recording is obtained by moving saw-like aperture blades to and fro in front of the slit so that the length of the latter varies in keeping with the waveform. Instead of moving the aperture itself, one can cut down inertia by causing an image of it to oscillate via a small mirror. This mirror ist the heart of the so-called "light modulator"; it reacts under the influence of a fluctuating magnetic field, itself the result of current changes brought about by the sound waves.

In comparison, the sound system for reproduction is of a much simpler construction. Irrespective of the recording art, it incorporates only the sound head lens which traces the slit on the sound track and, behind, a photo cell which converts the light fluctuations into alternating current; the latter are then reproduced as sound in the loudspeaker.

In order to guarantee a playback quality entirely free of distortion, it is necessary to ensure that the film runs very smoothly with constant speed past the recording, respectively pick-up point. Experience has shown that such uniform speed can only be obtained by means of a flywheel mass; the film must run securely over a heavy film roller in the immediate region of the sound scanning slit. Seeing that the advancing of the picture in sound movie projectors takes place in jerks at the film gate, the sound track may only be scanned at some distance away from the gate, since the sound requires an absolutely continuous transport. This synchronization distance has been standardized at 20 frames for 35-mm-gauge film. It is quite clear that when printing the film copies, this picture/sound spacing must be taken into account in order to synchronize the action and spoken word.

On 35 mm film the sound track is 2.68 mm broad and is squeezed between the picture and the perforation on one side; on 16 mm sound film the 2.23-mm-broad track is located on the non-perforated side of the film. The original distribution of image and sound track was altered in some 35 mm films in the post-war period when more space was required for multiple sound tracks; the picture area became smaller, the perforations too, in order to make such special effects as stereo sound and Cinemascope possible. The Cinemascope system is the best known of the wide-screen effects and incorporates four optical sound tracks, sometimes even an additional magnetic recording. In some cinemas one even used several projectors simultaneously, or a broader film format such as the 70 mm gauge of the Todd AO system with its 6 magnetic tracks, for producing realistic sound via six loudspeakers.

Magnetic sound, which is the best recording system at present on account of low noise and distortion factors, would probably have ousted optical sound were it not for the advantage of the latter that it can be developed simultaneously with the picture and that one can make hundreds of copies from an image-sound negative in the shortest space of time. Yet, for the sake of better quality and the advantages of erasure and immediate recording, the sound is nowadays recorded magnetically on special perforated film of 35, 17.5 or 16 mm gauge; this applies to all the operation processes from the live, synchronized sound recording right through to the production of the negative film for printing the copies. It is only at the final stage that the sound is extracted from the magnetic tape and transferred by means of a light-modulated exposure, as described above, to a negative film from which the cinema copies may then be printed.

Photo: Tony Evan, London

The Technika 70 in Columbia

Text and photos by F. Ferré

Columbia is an imposing and enchanting country, a land full of bright colours and striking contrasts: high mountains and vast plains, the fierce heat of the Caribbean Coast and the freezing temperatures of the high Andes, the mud and straw huts of the Indians and humble peasants and the modern sky-scrapers of concrete and glass—all leave an impression of marked contrast.

All manner of races are represented in Columbia. From this racial boiling pot has emerged the easily recognizable, typical Columbian: a not very tall person with dark to matt-white complexion, intelligent and especially cunning.

Columbia can boast considerable archaeolgical treasures. One can inspect, for example, in the Park of San Augustin and in the Gold Museum in Bogota 20000 gold coins from six great cultural periods, some of which date back several thousand years. These facts are not so well known in the rest of the world, and this is the reason which has induced me to produce a picture-book on the country; it is due to be published soon by the Bibliothèque des Arts in Switzerland.

I travelled throughout this country, which stretches over more than 18° of latitude, by means of aircraft, jeep, mule, canoe, and, of course, on foot. Everywhere I went I took the Technika 70 with me, my true companion for the last nine years. On my travels I shot about 8000 exposures, devoted to all manner of subjects. I mostly used Ektachrome X but also EHB and Ilford FP 4 films loaded in three Super Rollex magazines. Lenses included a 100 mm Planar, a 53 mm Super Angulon, a 180 mm Telomar and 360 mm Tele-Xenar. The weight of the entire equipment turned the scales to 66 lbs. In spite of the obvious difficulties involved, it was worth while in view of the high quality of the copious picture material, a quality which I would not have achieved with a lighter, 35-mm outfit.

The Arhuacos Indians

The Arhuacos Indians live in the Eastern region of Columbia in the Sierra Nevada de Santa Marta, the highest peak of which reaches 18900 ft. This mountainous region is almost inaccessible, not only on account of the altitude, but also due to the attitude of the Indians, who regard strangers as unwelcome.

The Arhuacos are a wise people who speak in a quiet fashion without raising their voices and who are especially

The accompanying photo shows a gold figure from the Quimbayas era. Taken in the Gold Museum in Bogota in Columbia, with a 100-mm Zeiss Planar on the Technika 70 and Ilford FP 4.

Colour photo left:

Naive painting by Luis Roncango. Although this name may sound not at all familiar to European or Anglo-Saxon ears, this painter has considerable reputation in Columbia. His paintings are coveted and exchange hands at high prices. The author of this contribution, F. Ferré, held his Technika 70 in the hand to make this reproduction.
Kodak Ektachrome X 120.

kind to children and animals. The women work, almost without a break, from the crack of dawn till late evening. Their main occupation is the spinning or knitting of wool for clothing. Even when they are walking around, one sees them knitting busily on a "mochilas". The mochila is a large sack made of rough wool and decorated with geometrical patterns from the dye of certain plants. The sacks are worn by the men, women and children. In the case of the women the sack is held in such a fashion by a belt over the forehead that a child can be carried on her back in the sack. She thus has her hands free to knit, prepare a meal or till the soil.

The men employ this garment also for particular purposes: one kind of mochila serves exclusively for the "poporo", another to collect the Kola leaves and a third type to carry small sea-shells. The men bind such a mochila with a belt tied around the chest. A "poporo" is a small, gourd-shaped bottle with a long neck which contains a chalky powder made from burnt and ground mussels. Into this bottle the Indios dip a stick moistened with spittle after they have chewed Kola leaves. The powder reacts with the chewed Kola and results in a strong intoxicant. Every time they withdraw the stick from the poporo, they wipe it off at the extreme top of the bottle neck, so that a hard deposit is created after several months or years. The poporo, which has a decidedly phallus-like form, is carried by the Arhuacos Indios as soon as they reach manhood. This practice is regarded by them merely as a means towards a particular meditative state of mind, a kind of "Nirvana". Apart from the relatively few hours in which they attend to their fields, they devote practically all their time to their poporos. This race of Indios are philosophers and accord great importance in their lives to spiritual matters. It is maintained that some of them can convey thoughts to another person through telepathy and that they can heal through mental powers. Many male Arhuacos are subjected from an early age onwards to strict spiritual training. Especially those destined to be priests spend much of their childhood in the temples (Kankuruas), are locked up for long periods, often in total darkness, and receive a special diet according to secret rites. This is alleged to lend them supernatural powers.

The Arhuacos Indios are tall and thin and carry themselves proudly. They practise monogamy, live in a closed, self-sufficient economy, producing what they need themselves.

The Spanish missionaries are intent, at any cost, to integrate this fascinating little enclave with the rest of the population. Would it not be better for the UNESCO or other international body to protect them from such influences of "civilization" before it is too late. After all, there is the danger that an ancient culture, unique in the 20th century, is lost forever.

Below left: San Augustin, Archaeological Park. Technika 70, 100-mm Zeiss Planar, FP 4120.

Below right: Young Arhuaco Indio in the Sierra Nevada. Same picture data as above.

Next page:

Old "Hacienda" in Boyaca dating back to the Colonial era.
Technika 70, 53-mm Schneider Super Angulon, Ilford FP 4. All photos: F. Ferré, Paris.

PROFESSIONAL ENLARGERS

Part 2

The way one acquires an enlarger is often quite different to how one buys a camera. At the dealer's or wholesaler's the prospective customer is shown, in the majority of cases, only a relatively small selection of apparatus most of which has become known, anyhow, through intensive advertising. The chances are that the same dealer, if it was a matter of a camera, would be able to present the customer with a much larger variety of makes.

The actual number of professional enlargers on the market—since it is only these which are the subject of our surveys—is much, much larger. Regrettably, many of these instruments do not receive the attention they really deserve. Yet, it is for this very reason that the buyer should have a precise idea of what he intends doing with his future enlarger. It is most important that he thoroughly informs himself about the individual types of enlarger being offered by various manufacturers. Only in this way can he be sure of avoiding acquiring an apparatus which turns out to be less suitable for his particular purposes.

Experience has shown that when selecting an enlarger not all those points which *should* be taken into consideration *do* in fact receive attention. For example, one tends to think only of those formats at present being worked. One forgets that, at some time in future, it may prove necessary to include further or different processes.

The following are typical changes which can occur in laboratory practice:

- Only a few years ago the production of colour enlargements was a time-consuming and complicated process which required considerable skill, whereas today anyone can carry out such work with modern equipment. On account of the rapid progress in this field, the processing of a correctly-filtered colour print now takes not much longer than a black-and-white enlargement. If one had known all this several years ago, then it is likely that an enlarger would have been bought which readily accepted a colour mixing head.
- Quite unexpected, regular assignments begin to come in which call for the handling of half-tone films in exact register. If one had been enlightened about the need for a register frame at the time of buying the enlarger, there would be no problem today of how to get two films into exact alignment. It is also probable that one would have thought of the advantages of a vacuum film holder which was likewise only subsequently available for a few makes of enlarger.

Laboratories which are engaged in the purely industrial sector of photography are not infrequently called upon to produce printed circuits or make retrieval enlargements from microfilm. Also in such cases one will not get very far with a conventional photographic enlarger. Such tasks place exacting demands on the apparatus in question. On the other hand, a quality enlarger which can cope adequately with such high-precision work, is capable of dealing readily with all other kinds of "normal" laboratory work in black-and-white and colour. One can expect of such apparatus that it has facilities for correcting distortion, can reduce larger negatives as desired, accepts various types of illumination unit, etc.

As most readers must know, professional enlargers are listed in manufacturers' catalogues usually without any lens and sometimes even the illumination unit is extra. It is therefore not surprising that the buyers of new equipment tend to accept and use a lens if it is already available. This it is not wise, since it often turns out to be a so-called "taking lens". Special enlarging lenses are quite differently designed from systems computed for the exposure. This can only be described as false economy. Even lamp heads are quite different in their function. If one intends mastering all the various fields of commercial photography, then one is likely to require at least two different types of illumination unit, such as a colour mixing head and a condenser lamp head or a cold light unit.

If, when buying an enlarger, all these various points as well as personal preferences and needs are taken into consideration, the apparatus one does eventually acquire will be sure to give full and satisfactory service over many years.

We hope the following survey will help to simplify the correct choice.

The first part of this series dealt with enlargers from 2¼ square up to 4×5 in. In our next issue we shall deal with the very largest apparatus up to 8×10 in.

De Vere 810 S

Formats: up to 10×10 in./ 25×25 cm

Column: not appropriate, horizontal type

Head weight compensation: not necessary

Baseboard: not necessary

Adjustment of head: motor drive

Negative holder: special negative carrier

Focusing: motor drive

Light system: 4-element condenser system or "Dichromat 3" colour head

Magnification factor: depends only on size of room

Reduction facilities: depends on format and focal length

Correction of distortion: not provided

Special features: parallel shift of negative stage (vertical) and the lens standard (horizontal)
The same manufacturer also produces a Model 108 S and 108 A/F for the same format. We received no reply to our request for further details.

Manufacturer: De Vere (Kensington) Ltd., Thayers Farm Road, Beckenham, Kent BR3 4NB

Durst Laborator 138 S

Formats: from 35 mm up to 5×7 in.

Column: tubular column with rack and asymmetrical, four-arm base

Head weight compensation: counterweights

Baseboard: 23×31 in., adjustable for height

Adjustment of head: manual, optional motor drive

Negative holder: hinged negative carrier with or without glass, built-in format masks beneath the negative stage

Focusing: manual, optional motor drive

Light system: reflex system with interchangeable condensers, opal lamp or point-source lamp, CLS 301 or 300

Magnification factor: 5.3× from 5×7 using 210 mm lens, 28.5× from 35 mm neg. using 50 mm lens

Reduction facilities: available

Correction of distortion: adjustment of baseboard and head, lensboard swings

Special features: floor-stand type, copying illumination unit, copying cassette with register pins, reflex viewing feature, optional power drive for table adjustment

Manufacturer: Durst AG., I-30100 Bozen, Postfach 445

Distributor: Durst (USA) Inc., EPOI, 623 Stewart Av., Garden City, New York 11530

Durst Laborator 184

Formats: from 35 mm up to 8×10 in.

Column: two round columns with double-arm asymmetrical base

Head weight compensation: counterweights

Baseboard: 27×39 in., adjustable for hight

Adjustment of head: manual, optional power drive

Negative holder: hinged neg. carriers with or without glass, built-in format masks beneath the negative stage

Focusing: manual, optional power drive

Light system: reflex system for directional or diffuse illumination, interchangeable condensers, CLS 300 colour mix. head

Magnification factor: 4× from 8×10-in. with 300-mm lens, 33× from 35 mm neg. with 50 mm lens, unlimited in horizontal position

Reduction facilities: available

Correction of distortion: lensboard, baseboard and head may all be swung

Special features: floor-stand type, copying illumination unit, copying cassette with register pins, etc.
Also available as the "Repro-Laborator G 184" with 6000-w diffuse xenon light source, 2000-w quartz unit BWL 300, etc.

Distributor: Durst (USA) inc., EPOI, 623 Stewart Av., Garden City, New York 11530

Durst Laborator 1800

Formats: from 35 mm up to 8×10 in.

Column: rectangular, box-like construction with asymmetrical base on floor

Head weight compensation: motor drive

Baseboard: 39×51 in., motor-driven height adjustment

Adjustment of head: via electric motor

Negative holder: hinged negative carrier

Focusing: via electric motor

Light system: reflex system for directional or diffuse illumination, interchangeable condensers, colour head CLS 300

Magnification factor: 4× for 8×10 in. with 300-mm lens, 33× for 35-mm neg. with 50-mm lens, unlimited horizontal

Reduction facilities: available

Correction of distortion: by means of swinging head

Special features: floor-stand type, also available as "Repro-Laborator 1800" with steplessly adjustable, diffuse xenon light source of 6000 w, condenser lamp unit, 2000-w quartz diffuse illumination source BWL 300, copying cassette with register system, copying illumination unit

Distributor: Durst (USA) inc., EPOI, 623 Stewart Av., Garden City, New York 11530

Homrich VA 12 and VA 21

Formats: up to 5×7 in./13×18 cm, resp. 8×10 in.

Column: special 94-in. square steel column, profiled steel plate table

Head weight compensation: incorporated in the motor drive

Baseboard: 29×39 in., may be pushed in at three different heights

Adjustment of head: motor drive with two speeds

Negative holder: hinged negative carrier with adjustable format bands, also glassless holders

Focusing: motor drive with two speeds

Light system: condenser lamp unit with individual lenses, filter drawer for 6-in. filters

Available lenses: from 80 to 210 mm, resp., 360 mm

Magnification factor: depends on format and focal length

Reduction facilities: depends on format and focal length

Correction of distortion: not stated

Special features: register system, copying cassette with millimetre test plate and metal film holder on rapid-change slide, vacuum film holder, right-angle mirror for giant enlargements

Manufacturer: Ferd. Homrich & Sohn, D-2000 Hamburg 50, Große Rainstraße 41—45

Homrich VAST 25

Formats: 6×9 cm to 20×25 cm/ 8×10 in.

Column: square-section steel column, height 100 in.

Head weight compensation: incorporated in the motor drive

Baseboard: 29×39 in. of plastic-coated metal, power adjustment

Adjustment of head: remotely-controlled motor drive with two speeds

Negative holder: hinged negative carrier, adjustable masking bands

Focusing: remote, via electric motor

Light system: diffuse-light colour head with 6 quartz lamps (incorporates warning signal if lamp fails), extra filter drawer

Available lenses: from 80 to 360 mm focal length

Magnification factor: depends on format and focal length

Reduction facilities: not given; depends on format, etc.

Correction of distortion: not given

Special features: exposure effected through central shutter, built-in exposure timer in control desk, attachment of paper roll dispensers possible, copying cassette with register pins, blower, copying illumination unit.
A similar apparatus is available for negs up to 5×7 in., VAST 18, for 80 to 210-mm lenses

Manufacturer: Ferd. Homrich & Sohn, D-2000 Hamburg 50, Große Rainstraße 41—45

Homrich HVA St 25

Formats: 6×9 cm up to 10×10 in./ 25×25 cm

Column: horizontal type running on rails, either manual or power drive travel

Head weight compensation: not necessary

Baseboard: wall projection instead

Adjustment of head: height adjustable through 49 to 59 in. via remote-controlled motor

Negative holder: 25×25 cm/9.8×9.8 in. negative carrier with adjustable format bands or 9.8×8 in./ 25×20 cm with format masks

Focusing: remote-control motor drive or manual

Light system: diffuse-light colour head, quartz lamps (warning signal if a lamp fails), extra filter drawer

Magnification factor: practically unlimited

Correction of distortion: not provided

Special features: exposure controlled by means of central shutter, digital counter for strip exposures, modular unit construction of electronic components, auto-volt. stabilizer, precision exposure timer, double-blower cooling.
A similar apparatus, the HVA 20, has an illumination unit with Rodenstock condenser system; housing forms one piece with the substructure.

Manufacturer: Ferd. Homrich & Sohn, D-2000 Hamburg 50, Große Rainstraße 41—45

K.L.B. Model 3020

Formats: 35 mm up to 5×7 in.

Column: double tubular column combined with box-like section

Head weight compensation: counterweights

Baseboard: 20×30 in., connected to column (floor-type stand available)

Adjustment of head: manual by means of crank

Negative holder: hinged negative carrier

Focusing: manual

Light system: lamp heads with cold light, tungsten + condensers, either direct or reflex illumination systems

Magnification factor: 6× onto baseboard from 4×5 in. using 150-mm lens, depends on format and focal length in use

Reduction facilities: available, 2.5× from 4×5 in. neg., depends on format and lens in use

Correction of distortion: negative stage and lensboard both swing

Manufacturer: K. L. Biggs Precision Equipment Ltd., 87 Goldstone Villas, Hove, Sussex, BN 3 3 RW, England

Linhof RC 13×18

Formats: 35 mm up to 13×18 cm/5×7 in.

Column: square-section steel column supported by asymmetrical base on floor, may be moved and locked in place

Head weight compensation: counterweight within the column

Baseboard: 23×35 in., may be adjusted for height, maximum distance baseboard/negative plane 42 in.

Adjustment of head: either manual or power drive with remote control, electromagnetic limit stops

Negative holder: negative stage may be moved at will or located with positioning guides, format masks, register system

Focusing: either manual or motor-driven with remote control

Light system: interchangeable condenser lamp unit with opal bulb and reflex system or Super Chromega dichroic colour head, point-source light

Magnification factor: 6× from 5×7 with 210 mm lens, up to 18× depending on format and lens

Reduction facilities: 2× from 5×7 with 210 mm lens, up to 5× depending on format and lens

Correction of distortion: through swinging baseboard, lens standard and enlarger head

Manufacturer: Linhof Präzisions-Kamera-Werke GmbH., D-8000 München 70, Rupert-Mayer-Straße 45

Super Chromega E II

Formats: up to 5×7 in.

Column: cantilevered double girder with trapezoid support for wall mounting

Head weight compensation: by means of two countersprings and brake

Baseboard: not required

Adjustment of head: manual, via crank, rack and pinion

Negative holder: revolving, hinged negative carrier, adapter for 4×5-in. neg. stage

Focusing: manual, friction drive

Light system: condenserless colour head E II Dichroic for diffuse illumination, built-in dichroic reflector, interchangeable light integration chambers, 250 watt/22.5-v quartz lamp, built-in blower

Magnification factor: depends on format and focal length

Reduction facilities: available, depends on format and lens

Correction of distortion: not provided

Distributor: siehe "Dichroic F"!

Super Chromega Dichroic F

Formats: up to 18×24 cm/8×10 in.

Column: double, special girder chassis inclined over travelling carriage

Head weight compensation: fully counterbalanced via 4 springs

Baseboard: 24×32 in., may be set at any of three heights

Adjustment of head: manual

Negative holder: 10×10 in. negative stage

Focusing: manual

Light system: colour head with indirect, diffuse light from four 250-watt quartz lamps, cooled by blower attached to wall, light control and intensification masks, power transformer with warning system for burned-out lamp

Magnification factor: depends on format and focal length

Reduction facilities: depends on format and focal length

Correction of distortion: not provided

Distributor US: Berkey Marketing Companies, Inc., Omega Enlarger Division, Woodside, New York 11377

Teufel VG 5×7 Super

Formats: from 35 mm up to 5×7 in.

Column: double column for wall mounting

Head weight compensation: not provided

Baseboard: not required

Adjustment of head: manual, by means of crank and spindle

Negative holder: hinged negative carrier, built-in adjustable masking bands

Focusing: manual

Light system: double-condenser unit with 300-watt opal lamp or Super Chromega E II dichroic colour head, as well as lamp head with five opal bulbs (diffuse light)

Available lenses: from 50 to 210 mm

Magnification factor: depends on format and focal length used

Reduction facilities: available, depends on format and lens

Correction of distortion: head and lens standard may be swung

Special features: negative stage for accepting single, horizontal and vertical negs, copying cassette with adjusting slide and test neg, drawer for 9×9-in. filters

Manufacturer: Paul Teufel & Cie, D-7000 Stuttgart, Postfach 1102

Fujichrome Professional Type D

(for daylight)

The majority of photographers in West Germany and the Anglo-Saxon world tend to use film from only two manufacturers: Kodak and Agfa-gevaert. This is not so much a question of tradition or indolence but one of personal conviction in most cases. One simply believes that a particular brand guarantees purer colours, greater sharpness; in fact, many swear that theirs is the *only* film worth using. Such a standardization often leads, however, to optimum results, especially in the studio. In such instances the degree of "specialization" is so great that one can even notice a certain routine.

Are such photographers still capable of changing their ways, are they prepared to try out something new? Since there were previously hardly any alternatives, there was little reason to be unfaithful to one's favourite brand. Another film manufacturer, whose name is not unfamiliar in photographic circles, is trying to wedge his way in between these two giants and capture a part of the market. With the introduction of "Fujichrome Professional Type D" roll film, the Japanese manufacturer Fuji has made a number of Agfa and Kodak customers think twice. Some of them were induced by the trial-film-offer launched in "International Photo Technik" to try out this previously unknown emulsion. They were not disappointed!

It is by no means an easy undertaking for a relative outsider to break into an established market, especially when the coveted target group is perfectly satisfied with the existing products on that market. Fuji's "man in Germany" Hermann Baur, therefore had to be clever indeed to wedge his foot into the door leading to this European market. In this connexion one might call to mind the very subtle PR campaign in which the resistance of the styropor packing to adverse weather conditions was underlined ("the Fuji Butter Test").

Now that things have quietened down somewhat on the German market, it is time to ask whether Fuji have, in fact, been successful in giving their film an image and carving out a portion of the market for themselves.

What advantages does this film offer, in the first place? The following are the data given by the manufacturer:

Fujichrome Professional Type D

is a colour reversal film for daylight or similar colour temperature illumination. Provided it is properly exposed and processed exactly according to instructions, the film gives transparencies of first-class quality. The speed rating is ASA 100 or 21 DIN at a standard exposure time of around $^1/_{250}$ sec. Long exposures of over 1 second call for an increase in exposure and the use of colour correction filters. This is in keeping with the law concerning reciprocity failure, and the following correction factors should be observed in such cases:

Exposure time in seconds	$^1/_{1000}$ to $^1/_2$	1	4	16
Increase aperture*	—	$^1/_3$ stop	$^2/_3$ stop	$^2/_3$ stop
Compensation filters	—	CC-5C	CC-10C	CC-20C

* Includes the exposure factor for the CC filters

Light sources:

The film is sensitized to give the best results when exposed by average, noon sunlight. Also here the range of contrast should not be higher than 4:1. Other suitable light sources are electronic flash, blue flash bulbs and fluorescent tubes.

a) Electronic flash and blue flash bulbs do not normally require any filtration. It is advisable to make tests if shutter speeds greatly deviating from $^1/_{60}$ sec. are often to be used.

b) If fluorescent (neon) tubes are often encountered, an appropriate filter should be used to avoid colour bias. Several filter combinations may prove necessary, since neon tubes tend to vary in their colour quality. Further, fluctuations in the mains voltage may have to be taken into account. Exposures of somewhat less than $^1/_{30}$ sec. are recommended.

The following table gives an indication of the filtration which should be tried out in order to give optimum results:

Type of neon tube	white	daylight	white de luxe
Compensation filter	CC-20M+5R	CC-10M+40R	CC-20B+5C
Increase aperture	$^2/_3$ stop	1 stop	1 stop

Development of Fujichrome Professional Type D

Exposed films may be put through the Fuji Process CR-55 or Kodak E-4. The Fuji agent in Düsseldorf informed us that the importers generally try to obtain a shipment of only one emulsion number so that photographers can be sure there will be no colour variations from this source at least.

Colour pages

The photos shown here were put at our disposal by the German representative of Fuji in Duesseldorf and were originally published in the informative brochure "Fujichrome Professional Type D" which provides essential data about the film. They demonstrate just what one can do with this emulsion, how one can master a tone-in-tone-subject (page 64) just as easily as a dynamic shot with colours which are normally difficult to render.

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With respect to processing one ought to mention that although many custom labs are prepared to accept Fuji films, not all of them have been delivering perfect results. Even pointing out the suitability of the E-4 process does not always lead to the hoped-for quality. The choice of the lab and careful enquiries are important here. Those who can process this emulsion reliably themselves are probably best off in this respect!

So long as Fujichrome D is given the right exposure and subjected to the correct chemistry, it provides transparencies of astonishing colour brilliance and sharpness. It is absolutely suitable for professional purposes and there is no reason why we should not recommend it.

The only point which gives cause for concern is the supply situation in Europe. In Germany, for example, most of the wholesalers do not stock this film, and few of them seem to have expressed the intention of finding space for it on their shelves in future. When asked, most dealers respond with something like, "Do you really want *that* film?" Or: "Sorry, we only keep Kodak and Agfa."

Once again it becomes abvious just how seldom photo salesmen try out a new film!

contact

SPSE issues papers call for 29th annual conference

The Society of Photographic Scientists and Engineers has issued a call for papers for its 29th Annual Conference and Color Reproduction Seminar to be held in the Barbizon Plaza Hotel in New York City on May 23—28, 1976. This announcement was made by Peter Krause, Ilford, Inc., General Chairman. Dr. Robert Gold, Ulano Graphic Arts is Papers Chairman.

The Annual Conference is divided into two major parts. The Color Reproduction Seminar, composed of invited and contributed papers, will be an intensive treatment of this specialized subject. The technical sessions of the Annual Conference will include mainly contributed papers in sessions based on the technical sections that have been established in 1975. These sessions will include Applied Photography, Business Graphics, Graphic Arts, Medical Radiography, Photofinishing, Processing Techniques, Scientific Photography, Chemical Photographic Mechanisms, and Electrophotography.

The Seminar on Color Reproduction will include sessions on visual aspects of color reproduction, color recording modes and systems, camera type photographic materials, color printing materials and systems, processing systems, color measurement and process control.

Papers submitted should be original work, highly technical and not previously published. Those wishing to submit a paper should contact Dr. Robert Gold, Ulano Graphic Arts, 280 Bergen Street, Brooklyn, New York 11212 (phone 212 596-1304).

contact

World's First Video Disc Exposition

The world's first conference about the new technology and commercial markets for video discs is to be held in London early next year—on 13th, 14th and 15th April 1976 at the Royal Lancaster Hotel. This will be the first opportunity for the many affected by video disc developments to see for themselves various systems in operation. It is also hoped that the event will provide a platform for the first British demonstrations of the Philips and RCA video disc systems.

The three-day conference will embrace all aspects of the video disc in its wide-ranging applications. Technical, production, programming, legal, economic and marketing aspects will all be specific subjects for the various sessions planned. Speakers and session chairmen will be leading international authorities in their different fields of specialisation.

Programme chairman will be John Chittock, Editorial Chairman of *Screen Digest*, film and video columnist of *The Financial Times* and an authority on the video industry.

The conference is being organized by EBAV (UK) Ltd., a new company established in London by the large Scandinavian publishers Esselte and Bonnier—who have extensive interests and activities in the growing audio-visual markets. EBAV (UK) Ltd. is already responsible for publishing CTV Report in London. EBAV—the Stockholm-based parent company—has wide experience of conference organization in the video area.

Further information and details of programming, speakers and related events will bei issued in subsequent press releases. For programme details call John Chittock on (01) 580-2842. For organization and booking call Pia Gross on (01) 629-9381.

Nineteenth Sydney Exhibition

The Nineteenth Sydney Exhibition will be held in the Sydney Town Hall commencing September 1976.
There shall be eight sections as follows—

Monochrome Prints	Stereo Slides
Colour Prints	Free Essay in Series Prints or Slides
Nature Prints *and* Slides	Slide Sequences with Recorded Sound.
Colour Slides	

The Entry Fee shall be: $US 2.00 for slides, $US 3.00 for prints plus additional $1.50 if mounted prints submitted.

An entry fee should be forwarded for each section entered. Where currency restrictions prevent the forwarding of actual entry fees, International reply coupons will be accepted to cover return postage. For entries in print sections 17 I.R.C.'s should be forwarded with each entry. For each colour slide entry 12 I.R.C.'s should be forwarded.

Please post early—check with your Postal Authorities—8 to 12 weeks is normal shipping time by surface mail.

Closing date for entries	11th August 1976
Judging	13—14th August
Reports airmailed	20th August
Return total rejects	25th August
Exhibition	10—19th September
Return Entries	29th September.

Entry Forms: Wilma Grady, S.I.E.P., Box A144, P.O., Sydney South. 2000. Australia

Kinsey, Photographer: A Half Century of Negatives by Darius and Tabitha May Kinsey

The photographs of Darius Kinsey, who throughout a 45-year career documented the life and logging industry of northwest Washington, will be on exhibit in the History Gallery of The Oakland Museum Oct. 25 to Jan. 4.

Kinsey (1868—1945), one of the geniuses of American photography, traveled throughout northwestern Washington doing portraiture and photographing every aspect of logging, roaming the camps with his 11×14 format camera.

His wife, Tabitha May Kinsey (1875—1963) served as her husband's processor and printer. She worked for 50 years in the darkroom to print photographs from the thousands of negatives her husband sent from the field. Her skill in the darkroom allowed Darius to concentrate almost exclusively on taking the photographs, which he proceeded to do day after day for five decades.

By the time Kinsey took his last photograph in the fall of 1940, his work was famous throughout the entire state, but curiously, only within the timber industry, where it was regarded merely as fine documentation. Yet the camera work of Darius Kinsey was really a gigantic concentration of vision that clearly transcended the documentation of the logging industry.

In the year following Kinsey's death, the entire collection of negatives was purchased from Tabitha Kinsey by photographer Jesse Ebert, who tended the collection for 25 years. He occasionally sold a mounted print, but the collection remained virtually unknown. Not until 1970, when Berkeley author Dave Bohn became aware of the collection was its greatness brought to light. Bohn and Rodolfo Petschek purchased the Kinsey collection and began the painstaking research and photographic printing which has resulted in the 2-volume monograph published this year by The Scrimshaw Press.

The Oakland Museum exhibit, entitled "Kinsey, Photographer: A Half Century of Negatives by Darius and Tabitha May Kinsey", consists of a selection of photographs from the book "Kinsey, Photographer" published by The Scrimshaw Press of San Francisco. Also included are some of Kinsey's cameras, studio materials, original solar prints, and tools and accoutrements of logging camps such as those Darius Kinsey visited and photographed.

The exhibit coincides with the publication of the Scrimshaw Press monograph which is a superb record of the Kinseys' life work, featuring essays by the Kinseys' son and daughter, interviews and essays. The book (which is printed in a limited edition priced at $ 150) will be available through The Oakland Museum bookstore.

The Oakland Museum is located at Tenth and Oak Streets, one block from the Lake Merritt BART station.

SPSE issues call for papers 29th Annual Conference and Color Reproduction Seminar

Dr. Robert Gold, Program Chairman for the 29th Annual Conference and Seminar on Color Reproduction, has issued a call for papers for presentation at either of the two meetings. For the Annual Conference, papers should be in the general field of photographic science and engineering. For the Color Seminar, papers should deal with color reproduction. The Annual Conference General Chairman is Peter Krause, Ilford, Inc.

The time alocated for each presentation is 30 minutes, including a discussion period. Members wishing to submit papers should send an Author's Application and two copies of an Abstract, of at least 300 words. This material should be sent to:
Dr. Robert Gold, Ulano Graphic Arts, 280 Bergen Street, Brooklyn, New York 11217.

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